Annual CSO and CMOM Report

CY 2016

Required by NPDES Permit #MA0103331
for SRWTF and CSO Systems

March 2017

Springfield Water and Sewer Commission

Contents

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Glossary

AGCA . Accelerated Grease Cleaning Areas

AO . Administrative Order

BoDR . Basis of Design Report

CAP . Corrective Action Plan

CCTV . Closed-circuit Television

CIP . Capital Improvements Plan (or Program)

CIWEM . Chartered Institution for Water and Environmental Management

CMMS . Computerized Maintenance Management System

CMOM . Capacity, Management, Operations and Maintenance

CMR . Code of Massachusetts Regulations

CRI . Connecticut River Interceptor

CSO . Combined Sewer Overflow

CY . Calendar Year (CY 2016 is January 1, 2016 through December 31, 2016)

DWO . Dry Weather Overflow

EPA . Environmental Protection Agency

FM . Flow Meter

FOG . Fats, Oils, and Grease

FY . Fiscal Year (FY 2015 is July 1, 2014 through June 30, 2015)

I/I . Inflow and Infiltration

IPP . Industrial Pretreatment Program

IWP . Integrated Wastewater Plan

LTCP . Long Term Control Plan

MACP . Manhole Assessment Certification Program

MADEP . Massachusetts Department of Environmental Protection

MGD . Million Gallons per Day

MIS . Main Intercepting Sewer

MRS . Mill River Interceptor System

MUCI . Maintenance Utility Condition Index

NASSCo . National Association of Sewer Service Companies

NMC . Nine Minimum Controls

NOAA . National Oceanic and Atmospheric Administration

NPDES . National Pollution Discharge Elimination System

PACP . Pipeline Assessment Certification Program

PIIR . Pipeline Infrastructure Improvements Ranking

POTW . Publicly Owned Treatment Works

RG . Rain Gauge

SRWTF . Springfield Regional Wastewater Treatment Facility

SUCI . Structural Utility Condition Index

SSO . Sanitary Sewer Overflow

SWSC . Springfield Water and Sewer Commission

YSPS . York Street Pump Station

Executive Summary

The Annual CSO and CMOM Report for calendar year 2016 (January 1, 2016 through December 31, 2016) provides a comprehensive review of the Springfield Water and Sewer Commission's (SWSC's) integrated Combined Sewer Overflow (CSO) system and Capacity, Management, Operation, and Maintenance (CMOM) Program. The integrated CSO system includes the sewage collection system, CSO facilities (i.e. regulators and overflow pipes/outfalls), and the treatment system at the Springfield Regional Wastewater Treatment Facility (SRWTF). As a result of the integration of CMOM with the combined sewer system, this report also provides the annual review for the CMOM Program, thereby addressing the reporting requirements for both programs.

This annual report documents the performance of the CSO control and treatment system, as well as the CMOM Program activities over the past calendar year. The report includes a review of the major storm events that caused CSO to be discharged. In addition, the report documents the ongoing implementation of the SWSC's CMOM Program, which overlaps with the SWSC's Nine Minimum Control (NMC) elements of the CSO Program.

For the purposes of completeness and to facilitate an understanding of the data, this integrated CSO and CMOM Annual Report will present performance results and data to recognize trends from established baselines for many parameters previous reports. The trends will be utilized to demonstrate improvements or highlight areas requiring additional attention. The goal of the integrated CSO and CMOM program is to keep wastewater in the collection system and deliver it to the wastewater treatment plant.

Integrated CSO System Performance. Calendar year 2016 was a drier year in which Springfield received approximately 31.0 inches of rainfall when compared to the Typical Precipitation Year total of 42.2 inches per year The Typical Precipitation Year was previously identified to be the actual measurements from 1976 and represents the Commission's median annual rainfall series after analysis of historical rainfall records. It is regarded as the baseline for comparing the magnitude and impact of all annual rainfall series.

In total, the CSO system was activated a total of 178 times discharging 144.97 MG of CSO volume to the Connecticut River, Mill River and Chicopee River. Despite only a 2.9 inch decrease in rainfall, the CSO system discharged 77 fewer times in CY 2016 than in CY 2015, reducing the total volume of CSO discharge into the Connecticut River, Mill River and Chicopee River by 65.56 MG.

Nine Minimum Controls and CMOM Program. This report provides documentation of the on-going implementation activities involving the NMCs and CMOM Programs. In examining the requirements for NMC #1, proper operations and maintenance of the sewer system and CSO outfalls, it is clear that the CMOM Program is the best way to fulfill EPA's requirements for managing the combined sewer system.

The SWSC's CMOM Program has been designed to ensure that components of the collection system are cleaned and inspected at the proper frequency and that preventative maintenance and repairs are performed to cost-effectively reduce the number of sewerage releases, extend the useful life of the SWSC's sewer infrastructure, and properly manage collection system operations. In CY 2016, the SWSC's crews, consultants and contractors were able to:

- Inspect 82,971 linear feet of sewer pipe, or about 3.4% of the mainline sewer system
- Clean 997,003 linear feet of sewer pipe or about 40.2% of the mainline sewer system
    - This total includes 460,787 linear feet of unique sewer pipe cleaning in addition to a total of 536,216 linear feet of repeated cleaning in areas requiring ongoing regular maintenance.
- Complete 40 mainline sewer repairs on 1,829 linear feet of pipe
    - 43% of the projects were in response to collection system problems such as a sewer release and
    - 57% of the projects were undertaken to proactively address problems discovered during the pipeline assessment program this year or in previous years
- Repair 100 service laterals totaling about 1,786 linear feet of pipe
    - All of the projects were in response to sewer services problems such as a sewer releases, back-ups, or collapses
- Treat over 10,000 linear feet of pipe for roots using chemical root treatment and root saws
- Treat 9,000 linear feet of pipe for grease using chemical treatment
- Clean 3,466 manholes and surface assessment of 1,155 manholes

The priorities for the SWSC's NMC and CMOM work are based on Asset Management principles that prioritize actions to reduce risks to public health, sensitive receptors, and the environment. This approach has resulted in a strategic shift in capital and operating expenditures to maintenance-related projects:

- Capital expenditures in pipe rehabilitation, renewal, and replacement programs remain steady and appropriate. The SWSC continues to implement its pipeline rehabilitation, renewal and replacement program to reduce structural risks and extraneous inflow and infiltration (I/I) in the sewer system. Due to the success of this program, it is anticipated that this trend will continue for the next several years of the SWSC's Capital

Improvement Plan, reflecting the SWSC's focus on risk-based priorities for sewer capacity and condition.

Monitoring. As shown in this report, the SWSC continues to carry out system monitoring and overflow monitoring to ensure that permit requirements are achieved, human health is protected, and receiving water bodies meet the highest water quality standards possible.

Section 1 Introduction

The SWSC's Annual CSO and CMOM Program Report provides an assessment of the combined sewer overflow (CSO) control system performance during the past calendar year (CY 2016: January 1, 2016 through December 31, 2016), along with a summary of the sanitary sewer overflow (SSO) control performance and accomplishments through the Capacity, Management, Operation, and Maintenance (CMOM) program.

The SWSC's National Pollutant Discharge Elimination System (NPDES) permit requires the SWSC to submit annual CSO reports to the Massachusetts Department of Environmental Protection (MADEP) on the performance of the overall CSO system. The Annual CSO and CMOM report covers CSO capture, conveyance, overflow characteristics, treatment efficiencies, and on-going implementation of the Nine Minimum Controls (NMC).

Several of the NMC overlap significantly with elements of the SWSC's CMOM Program. Together, these two programs provide a comprehensive approach and view of how combined and sanitary sewerage is managed, collected, conveyed, treated and discharged throughout the SWSC's wastewater systems. The topics and overlap between the NPDES Permit, the CSO Program, and CMOM Program is displayed in Table 1-1. To efficiently and comprehensively address these overlapping topics, the SWSC reports on the annual CSO performance and the CMOM program together in this integrated document.

Table 1-1 NPDES Permit, CSO, and CMOM Program Overlap

	Regulatory Document		
	NPDES Permit	EPA CSO Policy	CMOM Guidance
System	Treatment Plant	CSO Control System	Collection System
Regulatory Requirements Addressed by Regulatory Documents	Outfall Effluent Limits		
	Dry Weather Treatment		
	Wet Weather Treatment	Wet Weather Treatment	
		CSO Event Control Levels	
		Nine Minimum Controls	
		NMC#1: Proper O&M	Maintenance Practices
	System Operating Plan	NMC#2: Maximize Storage	Operations
	Pretreatment Requirements	NMC#3: Pretreatment Requirements	
	System Operating Plan – High Flow Management Plan	NMC#4: Maximize Flow to POTW	Operations
	Sewerage Overflow Prohibition	NMC#5: Eliminate DWOs	Minimize SSOs
		NMC#6: Controls of Solids and Floatables	
		NMC#7: Pollution Prevention	
		NMC#8: Public Notification	Spill Response & Notification
	Monitoring	NMC#9: Monitoring	

1.1 Purpose

This report is intended to meet the CSO-related reporting requirements in the SWSC's NPDES permit and the annual reporting commitments contained in previous CMOM Program Reports. This annual report documents the performance of the CSO capture, conveyance, and treatment systems over the past calendar year, as well as the activities performed by the SWSC to improve its level of CSO and already high level of SSO control. The report also examines the major storm events that caused CSO to be discharged. In addition, the report documents the on-going implementation of the SWSC's robust NMC's program, especially those controls that overlap with CMOM. The NMC program consists of appropriate and cost-effective best management practices that make up the EPA-specified NMCs, which have been integrated into the SWSC's CSO Control Program.

CSO Control Program. The CSO Control Program is designed and operated to control the magnitude, frequency, and duration of wet-weather CSO discharges in compliance with State and Federal water quality standards. CSO discharges are controlled as required:

- Mill River: 1 discharge, per regulator, during the design storm (Typical Precipitation Year storm series).
- Chicopee River: 2 discharges, per regulator, during the design storm (Typical Precipitation Year storm series).
- Connecticut River: 8 discharges, per regulator, during the design storm (Typical Precipitation Year storm series) and per the approved LTCP/IWP Level of Control for completed CSO projects.

CMOM Program. The purpose of the CMOM program is to reduce the risk to public health and safety, sensitive receptors, and the environment due to sewerage releases from the wastewater collection system. It ensures that the collection system is managed cost-effectively to address other potential risks of failure.

1.2 Regulatory Background for Report

The Annual CSO and CMOM Report provides a summary of performance measures derived from six CSO and CMOM regulatory and program documents:

- *NPDES Permit # MA0103331*
- *SWSC's NMC Program Document,* April 1997 and updated April 2010
- *USEPA Combined Sewer Overflow Guidance for Nine Minimum Controls,* May 1995
- *Administrative Order Docket No. 08-037 (AO)*
- *USEPA Guide for Evaluating Capacity, Management, Operation, and Maintenance (CMOM) Programs at Sanitary Sewer Collection Systems,* January 2005
- *SWSC's FLTCP and IWP,* May 2012 and May 2014 respectively

These documents include components of the LTCP, IWP and asset management elements that SWSC has demonstrated in the past that it is committed to proactively addressing.

2009 SWSC NPDES Permit. The SWSC's NPDES Permit (effective November 1, 2009) is the primary regulatory document that prescribes most of the Annual CSO Performance report content. Permit requirements include:

- Annual Report (purpose of this report)
- Nine Minimum Controls (Section 3 through Section 8 of this report)

2010 Updated NMC Report. Implementation of CSO Controls along the Mill River and Chicopee River is complete. Implementation of CSO Controls along the Connecticut River is

underway. In areas where CSO Controls have been fully implemented, the NMCs continue to be implemented and adjusted to complement and enhance the control provided by the grey and sustainable infrastructure developed as part of the CSO Control Program.

A focus of this annual report is to integrate the CSO control information represented in the NMCs with the overlapping CMOM program elements for the collection system's management, operations, and maintenance. The major overlap between the CMOM and NMC components occurs with NMC#1 – Proper Operation and Maintenance, however there is also overlap with:

- NMC#2 – Maximize use of collection system for storage (operations controlled)
- NMC#4 – Maximize flow to the POTW (operations controlled)
- NMC#5 – Eliminate dry weather overflows (part of SSO reduction)
- NMC#8 – Public notification

This CSO and CMOM annual report provides summary tables and graphs for each of the NMCs to document their on-going implementation.

Administrative Order Docket 08-037 (AO) CMOM Program Report.

Over several years, the SWSC has implemented a CMOM program to help reduce the likelihood of sewerage releases by improving the overall reliability of the sanitary and combined sewer systems. The *CMOM Program Report* was developed to comply with the conditions of Administrative Order Docket 08-037 (AO).

The CMOM program specifically addresses proper operation and regular maintenance of the sewer system (NMC#1). The SWSC's wastewater collection system includes mainlines, trunk lines, interceptors, pump stations, and force mains. The SWSC is not responsible for service laterals. Property owners own and maintain the sewer service laterals from the mainline to the house/building. The SWSC's sewer collection system consists of 469 miles of collection system piping (321 miles of sanitary sewer including force mains and 148 miles of combined sewer) and 11,166 sewer manholes. The system also includes the Springfield Regional Wastewater Treatment Facility (SRWTF) at Bondi's Island in Agawam, MA and 33 pump stations.

The effectiveness of the SWSC's risk-based asset management approach to collection system operation and maintenance will be evaluated in this annual review of CMOM program actions and key performance indicators.

Section 2 Integrated CSO System Performance for CY 2016

The integrated CSO system consists of the combined sewer collection system; the CSO collection, inline storage, and pumping system and the SRWTF. This section reports on the performance of the overall integrated CSO system during CY 2016.

Section 2 summarizes the findings of the comparison between the 2016 Annual Rainfall and CSO Flow Meter Data Review. This section incorporates findings from the analysis of the four permanent rain gauges and the 23 permanent flow meters sited in the Springfield catchment.

Section 2.2.1, Rainfall Data Collection and QA/QC, presents a breakdown of the annual rainfall events recorded at all four local gauges and how they compare to the Springfield Typical Precipitation Year, when applying standard categorizations. The comparison to 1976 provides context as to how wet or dry the year 2016 has been with respect to the typical annual rainfall. The thorough understanding of the relative nature of the annual precipitation provides helpful context when analysing the annual CSO results.

In addition to the thorough review of the 2016 rainfall data, Section 2 includes a comparison between the 2016 Springfield CSO overflow meter data and the CSO results simulated by the sewer system hydraulic and hydrologic model (using InfoWorks CS software) and using the observed 2016 rainfall data, as well as a comparison versus the CSO predictions from the Typical Precipitation Year rainfall series.

2.1 Hydraulic Model Updates

During the 2016 calendar year no major adjustments were made to the hydraulic model. Updates were limited to minor corrections and improvement based on new information collected during the calendar year. For the purposes of this report the same model was used for this annual review as for the previous (CY2015) annual report.

2.2 Data Collection and QA/QC

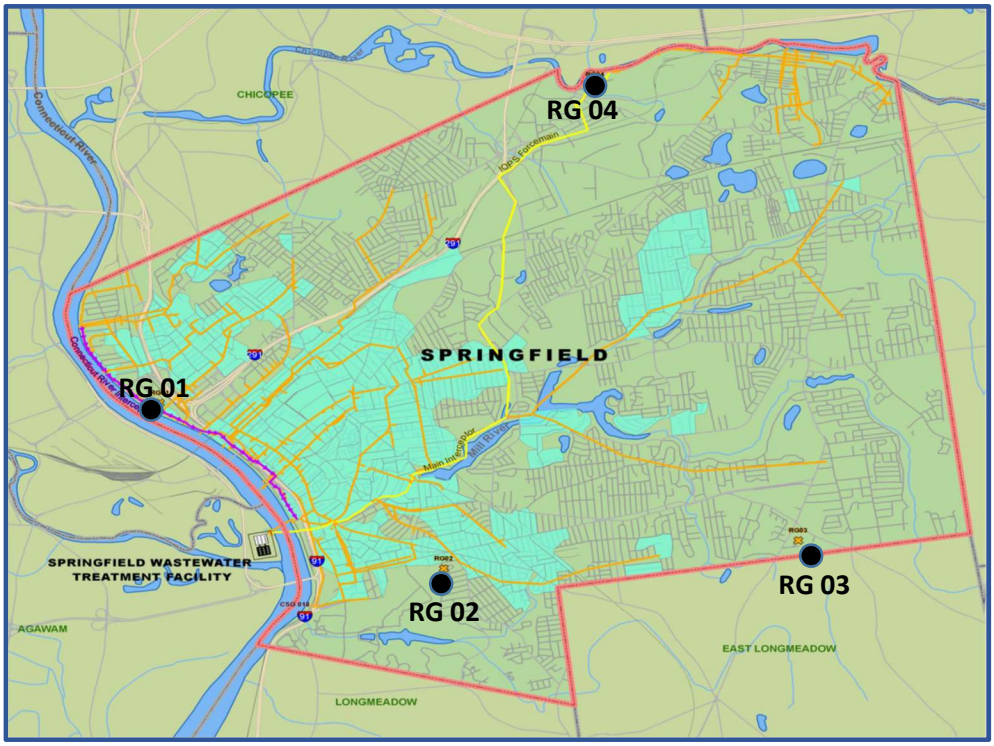
ADS Environmental (ADS) has been retained by the SWSC's contract operator Suez, as its flow metering subcontractor. ADS provides rain gage monitoring services as well as CSO measurements at each permitted CSO outfall, as described in the following sections.

2.2.1 Rainfall Data Collection and QA/QC

Rain Gauge Locations. Rainfall data was collected from the four local ADS-maintained rain gauges located within Springfield. The local rain gauges are positioned at the following locations in Springfield and as shown in Figure 2-1 below:

- RG01, stationed along the Connecticut River in the northwest quadrant of Springfield;
- RG02, stationed in the southwest quadrant of Springfield;
- RG03, stationed in the southeast quadrant of Springfield; and
- RG04, stationed in the northeast quadrant of Springfield.

Figure 2-1 Permanent Rain Gauge Locations Springfield, MA



Rainfall Data Categorization In recent years, the Commission has standardized it's categorization of rainfall; the last two annual reports have included these standardized results. The first stage to reviewing the rainfall data recorded was to compare the recorded rainfall depth at each of the four rain gauge sites. The gauges are spread throughout Springfield and therefore are susceptible to the spatial and temporal effects of rainfall. This is demonstrated by the varying total depths returned when compared across an entire year.

To better understand the nature of the rainfall that was recorded in Springfield during 2016, the annual hyetographs for the four rain gauges were disaggregated into both depth and intensity ranges. The ranges are designed to offer a breakdown as to the frequency of the individual rainfall events that comprise the annual hyetograph. The results of the breakdown of the annual rainfall total depth are contained in Table 2-1.

Table 2-1 2016 Rainfall Disaggregation by Total Depth

2016								
Data Set	Total Rainfall (inches)	Total No. of Storms	Number of Storms by Total Precipitation (inches)					
			0.01 to 0.13	0.14 to 0.25	0.26 to 0.50	0.51 to 1.0	1.01 to 2.0	2.0
ADS RG01	36.7	79	24	10	22	15	5	3
ADS RG02*	19.5	59	20	7	21	9	2	0
ADS RG03	26.8	83	36	8	21	15	2	1
ADS RG04	31.0	71	25	8	18	15	2	3
*Wiring issues and brief outages during second and third quarters of 2016								

It should be noted that during the 2016 calendar year, RG02 experienced a number of temporary outages during the second quarter of the year and ADS reported that the wiring failed during the third quarter of the year. The annual hyetographs and storm breakdowns for RG02, therefore, are significantly lower than those at the other three gauges (RG01, RG03 and RG04). As a result, during the annual rainfall correlation analysis RG02 was not included in the calculations. The missing RG02 rainfall data will also be discussed in Section 2.3, as it relates to the model CSO calculations and comparisons.

The wiring issues at RG02 were resolved in the last quarter of the year, so during October through December rainfall data was consistent with the other rain gauges. ADS has expressed concern with potential rain shadowing at this location due to its pole-mounted configuration and concern with the gage's tendency to capture grit that clogs the instrumentation. Moving forward into the 2017 calendar year metering program, the configuration of RG02 will be reviewed with ADS to see if it should be adjusted to avoid any future rainfall capturing error.

When considering the depth of rainfall within Springfield for the functioning gauges there is a moderately good correlation amongst the total depth and total number of storms among the three functioning rain gauges. The difference in the total depth between RG03, the lowest, and RG01, the highest, is 9.9 inches; a variance of 27% when considered across the entire annual

hyetograph. Using this rainfall for model simulation purposes this degree of variance may be expected to cause some variability in the predicted CSO results.

Looking deeper into the breakdown of total precipitation in the annual series, the following variability among the rain gauges results was also noted;

- There is the greatest percentage of variability in rainfall recordings in the 0.01 to 0.13-in, however this is the rainfall category least-likely to generate CSO activations, therefore the rainfall variance in this category was not expected to influence the CSO comparisons;
- Rainfall events in the 0.14 to 0.25-in category are those around the activation threshold of many of the CSOs (for the CRI system, in particular). This second category did show variability between RG01 (10 events), and RG03 (7 events), which may introduce lower confidence to the CSO predictions; and
- The remaining five categories did not show variability, however these categories tend to consistently generate CSO activations; therefore, the lack of variability here would not be expected to have major impact on the confidence in predictions. There was a peak variance of 17% across these storm categories (41 at RG01 as compared to 35 at RG03), which wouldn't be expected to affect confidence in the predictions.

Overall, variability in rainfall measurements (if due to rainfall recording inconsistencies or errors) in the 0.14-0.25-in category could be expected to contribute to discrepancies in the predictions of CSOs versus the measurements since the quality of model prediction output is reliant on the quality of data input.

To obtain a more complete picture of the 2016 rainfall recorded, the data was also considered from a peak intensity perspective to better understand the rainfall characteristics, as this is an important factor in determining the extents to which CSOs activate. Details of rainfall distributions broken down by intensity are summarized in Table 2-2.

Table 2-2 2016 Rainfall Disaggregation by Intensity

2016							
Data Set	Total Rainfall (inches)	Total No. of Storms	Number of Storms by Peak Intensity (in/hr.)				
			0.01 to 0.10	0.10 to 0.25	0.25 to 0.50	0.50 to 1.0	> 1.0
2016	36.7	79	31	28	13	4	3
ADS RG02*	19.5	59	30	20	8	1	0
ADS RG03	26.8	83	42	27	10	4	0
ADS RG04	31.0	71	29	27	10	3	2
*Wiring issues and brief outages during the second and third quarters of 2016							

As previously described, the significant discrepancy in total rainfall and number of storms recorded at RG02 means that data from RG02 was not considered in the review of peak intensity correlation amongst the gauges.

What is noticeable from the returned data is that the correlation amongst the gauges is most significant in the lowest peak intensity range (0.01 to 0.10-in/hr). The correlation among the other, higher, peak intensity storm ranges is better and those are the ranges that are most likely to trigger CSO activation. While the variability amongst the rainfall gauges exists, it appears as though the variability is particularly concentrated in the lowest peak intensity range and might, therefore, have less of an effect on CSO predictive capacity than in previous annual CSO reviews.

It is clear that the use of four discrete gauges across a city the size of Springfield may introduce some variability across the collected rainfall totals. Discounting the inevitable occasional gauge failure, the spatial and temporal effects of rainfall cause localized storms to occur which are not always captured at all gauges, resulting in mismatched depth totals. If better correlation is required, including the ability to capture rainfall data for modelling CSO performance, a more densely populated rain gauge network should be considered. While more rain gauges would not eliminate variance among the gauges it would provide more granularity in the results and, therefore, increased confidence in the representation of the spatial variation in rainfall throughout the city.

The irregular effects of rainfall passing across the city differ for every storm and this unpredictability is not currently reflected in the model. Since the model simulations depend on a depth of rainfall at a particular gauge to be distributed across an entire CSO catchment, the variability observed in reality is missed; the result is the potential for fluctuating comparison between actual CSO overflow and model predicted overflows.

Comparison with the Typical Precipitation Year (1976). One of the objectives of this TM was to compare the 2016 rainfall with the typical year (1976) rainfall. Before analyzing the annual CSO results, a thorough understanding of the rainfall data provides valuable context as to how wet or dry the year was, as compared to the typical year. Table 2-3 shows the total depth comparison and rainfall event range breakdown between the 2016 and 1976 series.

Table 2-3 Rainfall Disaggregation by Total Depth

Typical Precipitation Year (1976) v 2016								
Data Set	Total Rainfall (inches)	Total No. of Storms	Number of Storms by Total Precipitation (inches)					
			0.01 to 0.13	0.14 to 0.25	0.26 to 0.50	0.51 to 1.0	1.01 to 2.0	> 2.0
Typical year	42.2	82	28	15	11	14	11	3
ADS RG01	36.7	79	24	10	22	15	5	3
ADS RG03	26.8	83	36	8	21	15	2	1
ADS RG04	31.0	71	25	8	18	15	2	3
2016 Median	31.0	79	25	8	21	15	2	3

Comparison between the 2016 gauges with the 1976 series, shows some clear traits. Firstly, 2016 (median depth = 31 inches) was a much drier year in terms of total rainfall depth compared with 1976 (27% drier). The median storm count in 2016 (79 storms) is only slightly (4%) lower than the 1976 storm count (82 storms).

It is evident that the reduction in the total number of storms during 2016 is a result of several differences amongst the total precipitation ranges as compared to the typical year events. In particular;

- The 2016 data shows a lower incidence of storms in the 1.01 to 2.0-in total precipitation range (a 55-81% reduction from 11 storms in the typical year to 2-5 during 2016), a range that consistently generates overflows, particularly in the in the CRI system;

- The 2016 data shows a lower incidence of storms (47% lower) in the second lowest range 0.14 to 0.25-in with (8) during 2016 versus (15) during the typical year. Because these rainfall events typically generate storms that are either just under or over the CSOs activation thresholds (for the CRI system), it is possible that the 47% variance might skew the results of CSO modelling when considering long periods of data; and

- These two ranges with lower storm incidence than the typical year are balanced by the 0.26 to 0.5-in total rainfall category in which the 2016 data show 90% more storms than during the typical year (21 storms during 2016 as compared to 11 during the typical year). The 0.26 to 0.5-in total rainfall category tends to generate storms above the CSO activation threshold.

For completeness the comparison between the 2016 and 1976 rainfall series was also analysed for peak intensity, and the results are shown in Table 2-4.

Table 2-4 Rainfall Disaggregation by Intensity

Typical Precipitation Year (1976) v 2016							
Data Set	Total Rainfall (inches)	Total No. of storms	Number of Storms by Peak Intensity (in/hr.)				
			0.01 to 0.10	0.10 to 0.25	0.25 to 0.50	0.50 to 1.0	> 1.0
Typical year	42.2	82	48	17	12	4	1
ADS RG01	36.7	79	31	28	13	4	3
ADS RG03	26.8	83	42	27	10	4	0
ADS RG04	31.0	71	29	27	10	3	2
2016 Median	42.2	82	48	17	12	4	1

Similar to the depth comparison, with the total number of storms in the year only slightly lower, the comparison of peak intensity storms shows variation amongst several storm intensity ranges, namely the lower two peak intensity ranges vary significantly. The lowest peak intensity range (0.01 to 0.10-in) shows significantly fewer storm events (33 during 2016, versus 48 during the typical year). This difference of 35% in the lowest range of peak intensities would not be expected to influence the CSO comparison, given that this low range does not generally cause CSOs to activate.

Conversely, however, the number of storms in the next largest range (0.10 to 0.25-in) is higher during 2016 (27) as compared to the typical year (17) and because these storms would be more likely to cause CSO activations, the imbalance in this range (60% higher during 2016 versus the typical year) can be expected to influence the 2016 CSO activations versus 1976.

2016 Rainfall Analysis Conclusions. The rainfall analysis findings indicate that the variability among the 2016 rainfall gauges data is highest in the total precipitation range of 0.01 to 0.13-in, the lowest range, and in the peak intensity range of 0.01 to 0.10-in/hr, also the lowest range. A combination of these depth and intensity ranges typically generates storms that are under the CSO activation threshold (for the CRI system). This variability amongst the rainfall gauges, therefore, would not be expected to cause discrepancies in modelled CSO activations.

From the rainfall gauge data collected it is clear that the 2016 rainfall data shows a drier year than 1976. The reduction in storms, however, was concentrated in the lower total depth and peak intensity ranges. The 2016 rainfall data shows an increase in total depth storms in the 0.26 to 0.50-in range, as well as an increase in peak intensity in the 0.10 to 0.25-in/hr range. These two ranges are both likely to activate CSOs (on the CRI system); therefore, the combination of

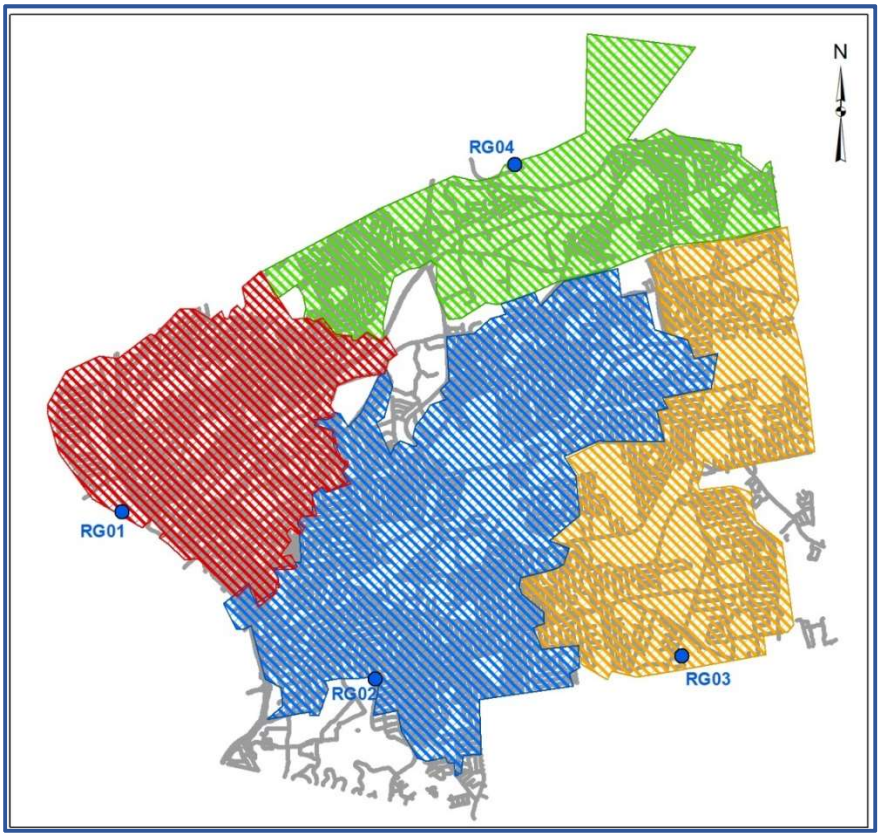
the increases in both may result in more common CSO regulator activation. It has become clear through previous iterations of flow metering review that CSOs by their natures in Springfield respond to shorter, more intense rainfall. With higher intensities observed in the 0.10 to 0.25-in/hr range, it is probable that wet weather responses likely to activate CSO regulators may be more common.

It should also be noted that the rainfall gauges capture all forms of precipitation, but do not distinguish between precipitation that falls as rainfall versus snowfall. Similar to previous annual reviews, variability in the CSO results may be a result of the effects of precipitation falling as snowfall, which may not translate to direct runoff in the same way as rainfall. Where it was suspected that precipitation fell as snowfall, the temperature records at Bondi's Island were used to corroborate this. In addition, the NOAA weather station at Bradley International Airport (the closest NOAA data point) was also referenced as the record of precipitation at this site, which distinguishes between snowfall and rainfall, and also provides a measure of accumulated snow on the surface. These two sources were referenced during the winter months, when it was suspected that the precipitation recorded fell as snow. However the potential for over-prediction of surface runoff (due to the model treating all precipitation as rainfall) and resulting CSO activations and volumes are inherent to the model predictions. The monthly comparisons presented in Section 2.3 provide an overview of those months where snowfall was suspected to be effecting the model results.

Correlation between the model results and the observed flow data may also be impacted by the failures at Rain Gauge RG02 and the resulting substitution of proximate rain gauge data. During seven months of the 2016 metering program (January-March, May, July, August and September), RG02 was often inoperable during several discrete periods. As a result, data from a proximate gauge was used to supplement missing RG02 data during model simulations. RG01 was considered the most reasonable substitution for the RG02 data, as RG01 showed the highest rainfall totals during most months and both are located close to the Connecticut River where during previous rainfall metering programs there has been correlation between the two gauges.

The model rain gauge distribution for Springfield is presented in Figure 2-2. The RG02 area of influence is located predominantly in catchments contributing to the Mill River System (MRS), therefore any effects of local variability in the rainfall that fell at RG01 versus RG02 would be expected to primarily have an impact on the model results in the MRS outfalls. There were a number of metering failures reported at RG03 during the month of November, as well, during which data from RG02 was substituted. These two discrete changes (during the month of November) would also be expected to impact the model results in the MRS, if the effects were observed anywhere.

Figure 2-2 Permanent Rain Gauge Areas of Influence



2.2.2 Wet Weather Reporting Enhancements

Similar to annual reporting conducted in 2015, the Commission requested an enhanced data set from ADS and from its wastewater treatment plant operator, Suez. Supplemental data continues to be reported as follows:

- Daily total rainfall from all four rain gauges maintained (from Suez & ADS);
- Daily total rainfall from a rain gauge at the SRWTF (from Suez);
- Daily average and daily peak influent flowrates to the SRWTF (from Suez); and
- Daily minimum and maximum temperatures recorded at the SRWTF (from Suez).

The supplemental data is provided to better enable characterization of the collection system response to rainfall and better understand any difference between model prediction and actual CSO recordings. For example, the recordings of CSO volume at an individual or group of CSO regulators on a winter day without recorded precipitation, together with observations of elevated SRWTF influent flows and above-freezing temperatures, would suggest that snowmelt is causing CSO discharges. While this does not waive a CSO occurrence it is important to

understand when evaluating predictive hydraulic model performance against actual observations.

2.3 Hydraulic Model Predictions vs. Regulator Flow Meter Measurements

This section reviews the results of simulating the sewer network model with the 2016 rainfall and comparing the model performance against the CSO regulator meter observations. Comparisons were made for the number of activations and the total overflow volumes on both a monthly and annual basis.

All CSO regulators within Springfield were included in the analysis and for ease of understanding were classified in the Connecticut River Interceptor (CRI), Mill River Interceptor (MRS) and Chicopee Systems.

2.3.1 Hydraulic Model Configuration

For the purposes of this analysis the same model was used for this annual review as for the previous (CY2015) annual report. Only minor updates were completed to the collection system during the 2016 calendar year.

2.3.2 CSO Regulator Results Comparisons

Monthly Tabular Comparisons – Meter Recordings vs Model Predictions. The results summarized in Table 2-5 below show the comparisons between the flow meter recordings and the hydraulic model predictions for CSO performance. In reviewing the rainfall data collected over the year, an antecedent dry period of 24 hours was used to quantify whether a precipitation measurement is considered a discrete rainfall event. This antecedent dry period is consistent with the dry period used to categorize the typical year rainfall events and is standard practice in CSO reporting across the U.S., in keeping with the EPA's CSO Long Term Control Plan guidance.

Furthermore, raw measurements have been evaluated with the application of the filters below, which helps provide better transparency on the reporting of the CSO measurements in alignment with the model's ability to predict CSO behavior;

- Measured CSO discharges of less than 3,000 gallons have been identified in the observed dataset and indicated in the comparison tables herein as all CSOs that are smaller than 3,000 gallons are not output from the model;

- Measured CSO discharges on days when functional float switches did not substantiate an overflow have been reviewed to assess their validity by reviewing rainfall. In a number of instances the float switches were noted to have experienced downtime. No spills were removed using this filter, however.

Monthly Comparisons – Connecticut River Interceptor (CRI). The 2016 comparison between the model prediction and observed data for aggregated annual spill-count along the CRI (Table 2-5) shows a variance of approximately 43%, with the model predictions higher than the ADS spill count data. The total annual spill volume comparison shows the model results 81% higher than the ADS CSO data along the CRI system. A major portion of this over-prediction can most likely be attributed to the fact that the meters at CSO 012 and 015B were both inoperable during the months of June through December, 2016. The model-simulated spills at CSO 012 and 015B account for approximately 14% of the total CRI system spills and 12% of the total CRI volume; therefore, these two meters outages alone do not account for the total over-prediction. The spill volume difference at CSO 010 accounts for approximately 69% of the total volume difference and 21% of the difference in modelled versus observed spill count along the CRI.

Similar to the analyses conducted in previous years, this variation in spills and volume indicates a potential imbalance between the rainfall falling on the catchment, the generation of runoff and the flows within the sewer network. The benefit of the wet weather reporting enhancements implemented over the past two years includes a better understanding of the potential sources of discrepancy between the model-predicted and the observed CSO performance. Breaking the observed versus predicted data into monthly comparisons also provides more context and understanding of the various storm events which did or did not trigger overflows.

The monthly CSO comparisons are presented in Table 2-6 for the three major system areas CRI, MRS and the Chicopee System.

Table 2-5 CRI Catchment Meter Recording vs Model Prediction Results

CSOs	2016 ADS Spill Report		2016 Model Results		Model Results for Typical Year (1976) Rainfall Series	
	*Total Spills**	*Volume (MG)*	*Total Spills*	*Volume (MG)*	*Total Spills*	*Volume (MG)*
Connecticut River System (CRI)						
CSO 007	3	0.45	2	0.49	6	1.2
CSO 008	2	0.38	10	6.96	8	6.5
CSO 010	37	34.09	53	114.62	55	125.4
CS0 011**	2 (2)	0.13	4	1.03	3	0.2
CS0 12***	17	44.17	29	30.76	29	35.4
CSO 13	11 (9)	12.35	6	9.12	6	4.7
CSO 014	40	9.36	50	33.83	50	36.9
CSO 015A	14 (5)	4.87	39	18.06	28	15.3
CSO 015B*	1	0	7	1.55	7	1.2
CSO 016	32 (1)	40.03	44	44.23	41	51.3
CSO 018	10	0.46	3	0.17	0	0
CSO 049	9 (2)	0.48	7	1.08	7	0.7
Total	178 (19)	144.97	254	261.88	243	279.6

** Numbers in parentheses reflect the removal of spills below the reporting limit of 3,000 gallons*
*** Spill count and volume reported by ADS are using a weir equation. The meter is located on the upstream side of the weir so this data is not a direct measurement of overflow occurrences.*
****Meters at CSO 012 and 015B were inactive during the months of June-December, 2016*

Focusing first on the CRI system, the following sections summarize the model results and the meter recording comparison for each month.

Table 2-6 Monthly CSO Results

January				
CSO	ADS		Model	
	Count	*Volume*	*Count*	*Volume*
Connecticut River System				
CSO 007	0	0	0	0
CSO 008A	0	0	1	0.204
CSO 010	0	0	2	7.147
CSO 011	0	0	0	0
CSO 012	2	7.726	1	1.474
CSO 013	1	0.107	0	0
CSO 014	2	0.71	2	2.137
CSO 015A	1	0.094	2	0.799
CSO 015B	0	0	0	0
CSO 016	2	2.09	2	2.185
CSO 018	1	0.004	0	0
CSO 049	1	0.14	0	0
Total	10	10.871	10	13.946
Mill River System				
CSO 017	0	0	0	0
CSO 019	0	0	0	0
CSO 024	0	0	0	0
CSO 025	1	0.004	0	0
CSO 045	1	0.038	0	0
CSO 046	0	0	0	0
CSO 048	1	0.039	0	0
Total	3	0.081	0	0
Chicopee System				
CSO 034	0	0	0	0
CSO 035	0	0	0	0
CSO 036	0	0	0	0
CSO 037	0	0	0	0
Total	0	0	0	0

February				
CSO	ADS		Model	
	Count	*Volume*	*Count*	*Volume*
Connecticut River System				
CSO 007	2	0.058	0	0
CSO 008A	2	0.38	2	2.697
CSO 010	3	7.133	5	16.783
CSO 011	0	0	0	0
CSO 012	3	21.02	3	3.736
CSO 013	3	0.215	0	0
CSO 014	3	2.017	4	4.895
CSO 015A	3	0.127	3	1.865
CSO 015B	0	0	0	0
CSO 016	3	7.821	4	4.691
CSO 018	1	0.016	0	0
CSO 049	3	0.275	0	0
Total	26	39.062	21	34.667
Mill River System				
CSO 017	1	0.004	0	0
CSO 019	0	0	0	0
CSO 024	0	0	0	0
CSO 025	1	0.086	0	0
CSO 045	1	0.016	0	0
CSO 046	0	0	0	0
CSO 048	2	0.284	0	0
Total	5	0.39	0	0
Chicopee System				
CSO 034	1	0.021	0	0
CSO 035	0	0	0	0
CSO 036	1	0.086	0	0
CSO 037	2	0.005	0	0
Total	4	0.112	0	0

March				
CSO	ADS		Model	
	Count	*Volume*	*Count*	*Volume*
Connecticut River System				
CSO 007	0	0	0	0
CSO 008A	0	0	0	0
CSO 010	2	0.961	4	6.403
CSO 011	0	0	0	0
CSO 012	4	6.276	1	0.042
CSO 013	3	0.003	0	0
CSO 014	3	0.117	4	1.713
CSO 015A	2	0.004	3	0.3
CSO 015B	0	0	0	0
CSO 016	2	1.571	3	0.707
CSO 018	1	0.01	0	0
CSO 049	0	0	0	0
Total	17	8.942	15	9.165
Mill River System				
CSO 017	0	0	0	0
CSO 019	0	0	0	0
CSO 024	0	0	0	0
CSO 025	0	0	0	0
CSO 045	0	0	0	0
CSO 046	0	0	0	0
CSO 048	0	0	0	0
Total	0	0	0	0
Chicopee System				
CSO 034	0	0	0	0
CSO 035	0	0	0	0
CSO 036	0	0	0	0
CSO 037	2	0.009	0	0
Total	2	0.009	0	0

April				
CSO	ADS		Model	
	Count	*Volume*	*Count*	*Volume*
Connecticut River System				
CSO 007	0	0	0	0
CSO 008A	0	0	0	0
CSO 010	4	0.843	6	6.912
CSO 011	0	0	0	0
CSO 012	4	4.907	2	0.081
CSO 013	0	0	0	0
CSO 014	4	0.246	6	1.894
CSO 015A	0	0	5	0.311
CSO 015B	0	0	0	0
CSO 016	3	0.657	5	0.633
CSO 018	1	0.014	0	0
CSO 049	0	0	0	0
Total	16	6.667	24	9.831
Mill River System				
CSO 017	1	0	0	0
CSO 019	0	0	0	0
CSO 024	0	0	0	0
CSO 025	0	0	0	0
CSO 045	1	0.008	0	0
CSO 046	0	0	0	0
CSO 048	0	0	0	0
Total	2	0.008	0	0
Chicopee System				
CSO 034	0	0	0	0
CSO 035	0	0	0	0
CSO 036	0	0	0	0
CSO 037	0	0	0	0
Total	0	0	0	0

May				
CSO	ADS		Model	
	Count	Volume	Count	Volume
Connecticut River System				
CSO 007	0	0	0	0
CSO 008A	0	0	0	0
CSO 010	4	1.35	6	8.226
CSO 011	0	0	0	0
CSO 012	4	4.24	3	0.589
CSO 013	3	0	0	0
CSO 014	7	0.788	6	2.027
CSO 015A	3	0.003	5	0.421
CSO 015B	1	0.003	0	0
CSO 016	5	1.256	6	0.643
CSO 018	0	0	0	0
CSO 049	0	0	0	0
Total	27	7.64	26	11.906
Mill River System				
CSO 017	0	0	0	0
CSO 019	0	0	0	0
CSO 024	0	0	0	0
CSO 025	1	0.033	0	0
CSO 045	0	0	0	0
CSO 046	1	0.006	0	0
CSO 048	0	0	0	0
Total	2	0.039	0	0
Chicopee System				
CSO 034	2	0.011	0	0
CSO 035	0	0	0	0
CSO 036	0	0	0	0
CSO 037	2	0.003	0	0
Total	4	0.014	0	0

June				
CSO	ADS		Model	
	Count	Volume	Count	Volume
Connecticut River System				
CSO 007	0	0	0	0
CSO 008A	0	0	2	0.712
CSO 010	3	3.117	3	7.371
CSO 011	1	0	1	0.024
CSO 012	0	0	2	3.371
CSO 013	2	1.414	1	0.633
CSO 014	3	0.665	3	2.373
CSO 015A	2	0.153	3	1.445
CSO 015B	0	0	2	0.114
CSO 016	2	3.109	3	3.139
CSO 018	2	0.013	0	0
CSO 049	1	0.025	2	0.092
Total	16	8.496	22	19.274
Mill River System				
CSO 017	0	0	0	0
CSO 019	1	0.176	0	0
CSO 024	0	0	0	0
CSO 025	2	0.031	0	0
CSO 045	0	0	0	0
CSO 046	1	0.114	1	0.008
CSO 048	2	0.007	0	0
Total	6	0.328	1	0.008
Chicopee System				
CSO 034	2	0.005	0	0
CSO 035	2	0.077	0	0
CSO 036	2	0.138	0	0
CSO 037	2	0.026	0	0
Total	8	0.246	0	0

July				
CSO	ADS		Model	
	Count	Volume	Count	Volume
Connecticut River System				
CSO 007	0	0	0	0
CSO 008A	0	0	0	0
CSO 010	2	0.653	5	2.854
CSO 011	0	0	0	0
CSO 012	0	0	1	0.308
CSO 013	1	0.001	0	0
CSO 014	2	0.182	4	0.727
CSO 015A	1	0.012	2	0.14
CSO 015B	0	0	0	0
CSO 016	2	0.13	2	0.303
CSO 018	0	0	0	0
CSO 049	0	0	0	0
Total	8	0.978	14	4.332
Mill River System				
CSO 017	0	0	0	0
CSO 019	0	0	0	0
CSO 024	0	0	0	0
CSO 025	0	0	0	0
CSO 045	0	0	0	0
CSO 046	1	0.002	0	0
CSO 048	0	0	0	0
Total	1	0.002	0	0
Chicopee System				
CSO 034	1	0.001	0	0
CSO 035	1	0.004	0	0
CSO 036	1	0.06	0	0
CSO 037	1	0.003	0	0
Total	4	0.068	0	0

August				
CSO	ADS		Model	
	Count	Volume	Count	Volume
Connecticut River System				
CSO 007	1	0.393	1	0.452
CSO 008A	0	0	3	0.913
CSO 010	4	10.001	4	19.105
CSO 011	2	0.041	2	0.718
CSO 012	0	0	4	12.542
CSO 013	4	6.254	3	6.064
CSO 014	4	2.979	4	6.664
CSO 015A	3	3.029	3	7.301
CSO 015B	0	0	3	1.035
CSO 016	4	12.662	4	18.861
CSO 018	2	0.363	2	0.103
CSO 049	2	0.012	3	0.689
Total	26	35.734	36	74.447
Mill River System				
CSO 017	3	0.045	2	0.346
CSO 019	2	0.967	0	0
CSO 024	1	0.021	0	0
CSO 025	3	0.777	0	0
CSO 045	2	1.43	0	0
CSO 046	1	0.322	2	0.294
CSO 048	4	0.091	0	0
Total	16	3.653	4	0.64
Chicopee System				
CSO 034	2	0.018	0	0
CSO 035	1	0.244	0	0
CSO 036	0	0	0	0
CSO 037	1	0.177	0	0
Total	4	0.439	0	0

September				
CSO	ADS		Model	
	Count	Volume	Count	Volume
Connecticut River System				
CSO 007	0	0	1	0.035
CSO 008A	0	0	1	1.863
CSO 010	6	4.811	7	11.826
CSO 011	1	0.084	1	0.291
CSO 012	0	0	5	5.345
CSO 013	3	4.356	2	2.423
CSO 014	6	0.523	7	3.721
CSO 015A	2	1.4	5	3.223
CSO 015B	0	0	2	0.396
CSO 016	4	1.917	6	7.933
CSO 018	2	0.037	1	0.062
CSO 049	2	0.004	2	0.294
Total	26	13.132	40	37.412
Mill River System				
CSO 017	2	0.019	1	0.176
CSO 019	0	0	0	0
CSO 024	0	0	0	0
CSO 025	3	0.442	0	0
CSO 045	0	0	0	0
CSO 046	2	0.175	0	0
CSO 048	2	0.017	0	0
Total	9	0.653	1	0.176
Chicopee System				
CSO 034	2	0.005	1	0.175
CSO 035	1	0.013	1	0.332
CSO 036	1	1.043	1	0.155
CSO 037	3	0.005	0	0
Total	7	1.066	3	0.662

October				
CSO	ADS		Model	
	Count	Volume	Count	Volume
Connecticut River System				
CSO 007	0	0	0	0
CSO 008A	0	0	0	0
CSO 010	2	0.174	2	6.572
CSO 011	0	0	0	0
CSO 012	0	0	1	0.141
CSO 013	0	0	0	0
CSO 014	0	0	2	1.804
CSO 015A	0	0	2	0.428
CSO 015B	0	0	0	0
CSO 016	0	0	2	0.69
CSO 018	0	0	0	0
CSO 049	0	0	0	0
Total	2	0.174	9	9.635
Mill River System				
CSO 017	0	0	0	0
CSO 019	0	0	0	0
CSO 024	0	0	0	0
CSO 025	0	0	0	0
CSO 045	0	0	0	0
CSO 046	0	0	0	0
CSO 048	0	0	0	0
Total	0	0	0	0
Chicopee System				
CSO 034	0	0	0	0
CSO 035	0	0	0	0
CSO 036	0	0	0	0
CSO 037	0	0	0	0
Total	0	0	0	0

November				
CSO	ADS		Model	
	Count	Volume	Count	Volume
Connecticut River System				
CSO 007	0	0	0	0
CSO 008A	0	0	1	0.574
CSO 010	4	4.05	4	12.187
CSO 011	0	0	0	0
CSO 012	0	0	3	2.763
CSO 013	0	0	0	0
CSO 014	4	0.94	3	3.367
CSO 015A	2	0.05	3	1.222
CSO 015B	0	0	0	0
CSO 016	4	8.21	3	3.364
CSO 018	0	0	0	0
CSO 049	2	0.026	0	0
Total	16	13.276	17	23.477
Mill River System				
CSO 017	0	0	0	0
CSO 019	0	0	0	0
CSO 024	0	0	0	0
CSO 025	2	0.004	0	0
CSO 045	0	0	0	0
CSO 046	0	0	0	0
CSO 048	0	0	0	0
Total	2	0.004	0	0
Chicopee System				
CSO 034	0	0	0	0
CSO 035	0	0	0	0
CSO 036	0	0	0	0
CSO 037	0	0	0	0
Total	0	0	0	0

December				
CSO	ADS		Model	
	Count	Volume	Count	Volume
Connecticut River System				
CSO 007	0	0	0	0
CSO 008A	0	0	0	0
CSO 010	3	0.95	5	9.232
CSO 011	0	0	0	0
CSO 012	0	0	3	0.368
CSO 013	0	0	0	0
CSO 014	2	0.19	5	2.506
CSO 015A	0	0	3	0.599
CSO 015B	0	0	0	0
CSO 016	2	0.61	4	1.084
CSO 018	0	0	0	0
CSO 049	0	0	0	0
Total	7	1.75	20	13.789
Mill River System				
CSO 017	0	0	0	0
CSO 019	0	0	0	0
CSO 024	0	0	0	0
CSO 025	0	0	0	0
CSO 045	0	0	0	0
CSO 046	0	0	0	0
CSO 048	0	0	0	0
Total	0	0	0	0
Chicopee System				
CSO 034	0	0	0	0
CSO 035	0	0	0	0
CSO 036	0	0	0	0
CSO 037	0	0	0	0
Total	0	0	0	0

The following paragraphs summarize the model results and the meter recording comparison for each month.

CRI – January 2016. Overall during the month of January, the model is over-predicting the total monthly CSO volume by 27% with 10.95 MG CSO observed versus 13.95 MG simulated.

The model simulated overflows at CSO 010, whereas the meter did not record any overflows. There were, however, two float activations on the same two days as the model simulated overflows, suggesting that the imbalance at CSO 010 may be a result of the fact that the flow monitoring equipment at CSO 010 was not operating correctly during the entire month of January. The model under-predicted CSO results at CSO 012. The January results at CSO 010 and 012 are similar to those that were observed during the 2015 annual CSO review in that the total combined overflow volume between CSO 010 and CSO 012 in January is being captured; however, there is an imbalance between the two CSOs.

There was also one float activation at CSO 008 that was not accompanied by a metered CSO spill at this outfall. The float activation occurred on the same day as the model simulated spill at CSO 008, suggesting that a malfunction at the meter may have prevented accurate metering of this spill.

Similar to the 2015 CSO analysis, the model continues to over-predict overflow volume at CSO 014.

CRI – February 2016. During the month of February the model over-predicted CSO spills and volume, with the exception of CSO 012 and CSO 016. Overall the monthly results are under-predicting by a factor of approximately 10% (with 39.5 MG observed and 35.7 MG of simulated overflow volume).

The three dates during which CSO 012 and 016 are under-predicting, flow occurred during days when the temperature fluctuated between just below freezing and just above (February 3rd, 16th and 24th). During these three events there was between 18 and 24 inches of snow present on the ground (source: Bradley International Airport NOAA Data). The model assumes the ground is free of snow cover; therefore, the model may be under-predicting CSO volume at these two locations, as a portion of the overflow volume may be due to snow melt at these locations.

The model's over-prediction of spills and volumes during the winter months may also be due to the fact that the rainfall data collected does not distinguish between precipitation falling as rain versus snow.

CRI – March 2016. For the month of March, the total observed volume and the spill event dates correlated well between the model results and meter data with only 2% difference (with 8.95 MG overflow observed and 9.17 MG simulated by the model). However the model continues to over-predict overflow volumes at CSO 010 & 014 and under-predict volumes at CSO 012.

CRI – April 2016. Both total spills and total volume were being over-predicted by the model during the month of April. There was 6.67 MG of overflow observed during the month of April and the model simulated 9.83 MG of overflow (a difference of 47%).

The model predicted spills during two events (April 3rd and April 5th) while none were reported by ADS during these two rainfall events. This may be due to the 3 – 4" of snow that fell during these two events (source: Bradley International Airport NOAA Data).

The spill volumes at CSO 010 & CSO 014 account for the significant portion of the over-predicted spill volume, whereas the spill volume at CSO 012 was, once-again, under-predicted.

CRI – May 2016. During the month of May, the spill event dates correlated well; however, the model over-predicted the total volume associated with these spills. There was 7.69 MG of overflow observed during the month of May and 11.91 MG simulated by the model (a difference of 55%). The total volume at CSO 010 and 014 were both over-predicted, as observed during previous months, and their spill volumes account for a significant portion of the over-prediction. Spill count and overflow volume at CSO 012 were, once again, under-predicted.

CRI – June 2016. In June, the model over-predicted the total observed volume by 117% while under-predicting the total number of spills, 30 observed spills observed (2 under 3,000 gal) and 23 simulated spills.

The model's over-prediction was partially caused by CSO 012 and 015B's flow meters being offline during the month of June. The model simulated CSO 012 and CSO 015B total overflow volumes to be 3.371 MG and 0.114 MG. Removing these CSOs from the analysis, the model's volume over-estimation was 78%. The model over-predicted overflow volumes for not only CSO 10 and CSO 14 as in the earlier months, but also CSO 011 and CSO 015A. Small overflows were observed at CSO 018, CSO 019, CSO 025, CSO 034, CSO 035, CSO 036, CSO 037, and CSO 048 but were not predicted by the model. The model under-predicted the observed overflows at CSO 013, CSO 046, and CSO 049.

CRI – July 2016. The model over-predicted July's overflow volume but predicted the same number of storms. 1.058 MG of overflow was observed, whereas the model predicted 3.48 MG of overflow.

CSO 012 and 015B's flow meters remained offline during July, while the model predicted a 0.274 MG overflow from CSO 012. In the model, CSO 010 and CSO 014 continued to be larger than the observed overflow, along with CSOs 15A and 16. The model did not predict the small storms observed at CSO 013, CSO 034, CSO 035, CSO 036, CSO 037, and CSO 046. However, this may be due to RG04 malfunctioning for CSO's 034, 035, 036, and 037.

CRI – August 2016. The model continued to over-predict spill volume in August. The model simulated 56% more overflow volume while predicting a lower number of spills than observed. The over-prediction was primarily observed in the CRI system. The CSO 012 and CSO 015B's flow meters were still offline during the month of August, but the model simulated 12.471 MG and 0.797 MG of overflow, respectively. Removing CSO 012 and 015B volumes from the total volume, the model overestimates the observed volume by 24%. The model also predicted large overflows for CSO 008, while no overflows were observed.

CRI – September2016. In September, the model continued to over-predict the overflow volume but predicted only one less spill event than observed. CSO 012 and CSO 015B's flow meters remained offline for September. The model overestimated the observed overflow by 119% with CSO 012 and 015B overflows and 81% without their overflow volumes.

CRI – October 2016. October was a dry month in which only two spill events were observed in the meters, resulting in 0.174 MG spilled. The model significantly over-predicted the spills to be 9.635 MG of overflow during nine spills (at CSOs 010, 012, 014, 015A and 016) when the metering data showed only two spills at CSO 010. The flow at CSO 010 accounted for a majority (approximately 67%) of the over-prediction of volume during the month of October.

CRI – November 2016. In November, the model over-predicted the volume of overflow; however, it predicted the same number of spills. The model predicted three spills at CSO 012 where the meter has been removed, which also results in overestimation of the total volume spilled. CSO 013 and 015B's meters were also removed, but no overflows were predicted for these CSOs. The model continues to over-predict spill volumes at CSO 010 and 014.

CRI – December 2016. Lastly, in December the model over-estimated the number of spills and the spill volumes. CSO 012 and 015B meters remained offline during December. The model predicted 3 of the 20 spills to occur at CSO 012, contributing 0.368 MG of the model's spill volume for the month. Not including CSO 012's spills, the predicted spill volume is 13.421 MG, while 1.75 MG volume was observed. CSO spill count and volume were over-predicted at CSO 010, 014 and 016. There was some

snowfall and ground cover of snow during this month, which may have caused some of this overestimation, as the model does not account for snow cover. On December 12th, 18th and 29th, all days when spills were predicted by the model, the temperature was below freezing, so snowfall may have resulted in lieu of rain and lessen the likelihood of actual measured overflow.

CRI System Review – 2016. When reviewing the full calendar year 2016 comparison of CSO measurements versus model predictions, there are discrepancies to evaluate. In previous iterations of the annual CSO monitoring program, the transient nature of sediment was found to be influential in the hydraulically interrelated CSO performance along the CRI. In particular, the overflows as CSOs 010, 012, 013, 014 and 015A/B were all found to readily interchange depending upon the sediment set up in various simulations. Table 2-7 compares the results across these six CSOs.

Table 2-7 CSOs 10, 12, 13, 14, 15A and 15B Results

CSO Weir Elevation	CSO	ADS Spill Report		Model Results	
		*Total Spills**	*Volume (MG)*	*Total Spills*	*Volume (MG)*
48.96	CSO 010	37	34.04	53	114.62
52.1	CSO 012**	17	44.17	29	30.76
54.6	CSO 013	11 (9)	12.35	6	9.12
48.3	CSO 014	40	9.36	50	33.83
48.6	CSO 015A	14 (5)	4.87	39	18.06
47.3	CSO 015B**	1	0.00	7	1.55
	Total	**120 (14)**	**104.79**	**184**	**207.93**

** Numbers in parentheses reflect the removal of spills below the reporting limit of 3,000 gallons*
***Meters at CSO 12 and 15B were inactive during the months of June-December, 2016*

In previous annual CSO reviews, including in the 2014 and 2015 analyses, it was apparent that the total combined results across CSOs 010, 012, 013, and 014 correlated well. See Table 2-8 for reference.

Table 2-8 CSO's 10,12,13,14 Results for Missing Flow Meters

	CSO	ADS Spill Report		Model Results	
	Total Spills	*Total Spills*	*Volume (MG)*	*Total Spills*	*Volume (MG)*
2015	CSO 010, CSO 012, CSO 013, CSO 014	143	163.5	142	207.7
2014	CSO 010, CSO 012, CSO 013, CSO 014	135	243.5	159	251.4

With two of the CRI meters, CSO 012 and 015B out of service for half of the year (June-December, 2016), however, the CRI comparisons are not as informational as during previous CSO annual reviews. Table 2-9 summarizes measurements versus predictions with the removal of model predictions at CSO regulators when missing measurements due to meter removal to facilitate construction activities.

Table 2-9 CSO's 10,12,13,14, 15A, 15B Results Adjusted for Missing Flow Meters

CSO Weir Elevation	CSO	2016 ADS Spill Report		2016 Model Results	
	Total Spills	*Total Spills*	*Volume (MG)*	*Total Spills*	*Volume (MG)*
48.96	CSO 010	37	34.04	53	114.62
52.1	CSO 012*	17	44.17	10	5.92
54.6	CSO 013	11	12.35	6	9.12
48.3	CSO 014	40	9.36	50	33.83
48.6	CSO 015A	14	4.87	39	18.06
47.3	CSO 015B*	1	0.00	0	0.00
	Total	**120**	**104.79**	**158**	**181.56**

**Meters at CSO 12 and 15B were inactive during the months of June-December, 2016; therefore, modelling data during these months was removed from this table.*

What has been noted in 2016 as well as previous annual analyses in 2015 and 2014 is consistent model under-prediction of CSO frequency and volume versus the measurements at CSO012. If the flow meter at CSO012 were in place for the full calendar year 2016 it is expected that the disparity in the predictions versus measurements across CSOs 10, 12, 13, 14, 15A and 15B would be lessened, and indeed the disparity in the predictions versus measurements in the full CRI system (Table 2-5) would also be lessened. Table 2-8 is again a demonstration of past performance comparison when full calendar year metering data is available.

CRI System Review - 2016 versus Typical Year (1976). Table 2-5 includes model predictions of the 2016 collection system configuration with the typical year (1976) precipitation series. What is evident is that across the entirety of the CRI system, there is general similarity between the model predictions for 2016 versus the typical year (1976), both on a regulator-by-regulator basis, as well as on the sum of CSO frequency and volume. Where differences exist, generally the 2016 rainfall series produced greater numbers of CSO frequency versus 1976, while concurrently the 2016 rainfall series produced lesser CSO volume versus 1976. This can be attributed to the comparison of rainfall series, as summarized in Section 2.2. Despite 2016 being overall a drier year in terms of rainfall total depth (inches) versus 1976, 2016 experienced greater numbers of storms versus 1976 that would be expected to generate CSOs based on storm intensity (inches/hr). At the same time, 2016 experienced fewer numbers of storms versus 1976 that would be expected to generate CSOs based on storm total depth (inches). When those two rainfall parameters (2016 experienced more frequent high intensity storms but fewer high volume storms) are evaluated in tandem (since CSOs are a product of both storm intensity and volume), the CSO frequency and volume results are comparable with expectations.

Comparisons – Mill River Interceptor System (MRS). The results of the comparison for the Mill River Interceptor System (MRS), presented in Table 2-10, similar to previous annual reviews, indicate that in many cases the size of the overflows at the regulators in the MRS are close to the model's lower threshold for spills. There were (6) spills observed by ADS that were lower than the 3,000 gallon threshold. A similar discrepancy in spill count and total volume, with the model under-predicting both, were observed in the 2014 and 2015 annual CSO reviews. This may be due to the skeletal nature of the network model of the Mill River System, in contrast to the CRI network which had significantly more detail included. The bulk of the CSO activations occurred during the summer months June-October.

The summer months June-October is the period during which more short-duration, high intensity storms would be expected. As noted in Section 2.2.4, the area of influence of RG02 area is located predominantly in catchments contributing to the Mill River System (MRS), therefore any effects of local variability in the rainfall that fell at RG01 versus RG02 would be expected to primarily have an impact on the model results in the MRS outfalls. Since the bulk of the activations and subsequent volume resulted from a handful of storms during the summer

months, any discrepancy in the rainfall observed at RG01 versus RG02 might have a significant effect on the CSO simulations throughout the MRS. For example, during one storm (Aug 2, 2016) RG 02 was temporarily inoperable and thus for the purposes of the model predictions RG01 was substituted. In this storm a total rainfall of 2.8-in was observed by RG01 while in other parts of town approximately 1.8-in was observed, so on this date variation in measurements versus model predictions would be expected.

In addition to the potential discrepancy associated with variability in rainfall, at one particular location, CSO 019, the application of a weir equation in lieu of a meter directly measuring overflow on the dry side of the weir creates difficulty in comparing model performance and observed data. The volume at CSO 019 accounts for approximately 22% of the total spill volume observed in the Mill River System. Furthermore, many of these regulators (CSO 017, 025, 045, 046, and 048) contain sensitive underflow control equipment (vortex valves). Vortex valves are represented in the model per the best available information, but in conditions of small overflow magnitudes such as the case in the Mill River system, the differences between observed and predicted are magnified due to the sensitivities of the equipment.

Table 2-10 Mill River CSO (MRS) Catchment Meter Recording vs Model Prediction Results

	2016 ADS Spill Report			2016 Model Results	Model Results for Typical Year (1976) Rainfall Series	
CSO	***Total Spills****	***Volume (MG)***	***Total Spills***	***Volume (MG)***	***Total Spills***	***Volume (MG)***
Mill River System (MRI)						
CSO 017	4 (3)	0.07	3	0.52	2	0.22
CSO 019**	3	1.14	0	0	0	0
CSO 024	1	0.02	0	0	0	0
CSO 025	12 (1)	1.38	0	0	0	0
CSO 045	5	1.49	0	0	0	0
CSO 046	5 (1)	0.62	3	0.3	6	0.26
CSO 048	10 (1)	0.44	0	0	1	0.03
Total	**40 (6)**	**5.16**	**6**	**0.82**	**9**	**0.5**

* *Numbers in parentheses reflect the removal of spills below the reporting limit of 3,000 gallons*
** *Spill count and volume reported by ADS are using a weir equation. The meter is located on the upstream side of the weir so this data is not a direct measurement of overflow occurrences*

Table 2-10 also includes model predictions of the 2016 collection system configuration with the typical year (1976) precipitation series. As previously stated, the 2016 rainfall series produced greater numbers of high intensity storms versus 1976, but conversely the 2016 rainfall series produced fewer numbers of high volume storms versus 1976. However, as in the 2016 analysis above, many of the overflows at the regulators in the MRS in the analysis of the 1976 storm series are close to the model's lower threshold for spills. When the general rainfall parameters

(2016 experienced more frequent high intensity storms but fewer high volume storms) are evaluated in tandem (since CSOs are a product of both storm intensity and volume), the CSO frequency and volume results are comparable with expectations.

Comparisons – Chicopee River System. The results of the comparison for the Chicopee System are presented in Tables 2-11. Many of the issues described in the MRS results summary are equally applicable for the Chicopee system. For example, in many cases the size of the overflows at the regulators in the Chicopee system are close to the model's lower threshold for spills. The small upstream catchments for the CSOs and the reported large number of small spills (nine spills below the model reporting limit of 3,000 gallons) do contrast with the model results when aggregated over the entire year.

Previous annual reviews have noted that at CSO 035 and CSO 036 there are stormwater catchments that are not represented in the model influencing the meter measurements. More specifically, due to the configuration of the system at these regulators, there are inopportune locations for direct combined sewer overflow measurements. The CSO035 meter is on a drain pipe that is vulnerable to storm flows from a local CB as well as a 36-in drain. The meter is not directly downstream of these drain flows but they could contribute to backwater conditions that may impact measured volume calculations. The CSO 036 meter is directly measuring stormwater measurements on a 48-in x 76-in RCP drain downstream of a CSO overflow weir but which also receives tributary separated drainage flows from two 36-in drains so the reported CSO volume is deemed to be conservative for this reason. CSO frequency at each of the CSO locations is substantiated by float switch activity so reported frequency is less questionable. Discounting the effects of stormwater on the CSO volume at the above two locations, there is reasonable correlation in CSO frequency and volume across the Chicopee system across the year, when considering that the size of the overflows at the regulators in the Chicopee system are close to the model's lower threshold for spills and the aggregate CSO volume is small.

Table 2-11 Chicopee River CSO Catchment Meter Recording vs Model Prediction Results

CSOs	2016 ADS Spill Report		2016 Model Results		Model Results for Typical Year (1976) Rainfall Series	
	*Total Spills**	*Volume (MG)*	*Total Spills*	*Volume (MG)*	*Total Spills*	*Volume (MG)*
Chicopee System						
CSO 034	7 (3)	0.06	1	0.175	3	0.2
CSO 035	5	0.34	1	0.332	2	0.2
CSO 036	5	1.33	1	0.155	1	0.05
CSO 037	7 (6)	0.23	0	0.00	0	0
Total	**24 (9)**	**1.95**	**3**	**0.66**	**6**	**0.5**

**Numbers in parentheses reflect the removal of spills below the reporting limit of 3,000 gallons*

Table 2-11 also includes model predictions of the 2016 collection system configuration with the typical year (1976) precipitation series. As previously stated, the 2016 rainfall series produced greater numbers of high intensity storms versus 1976, but conversely the 2016 rainfall series produced fewer numbers of high volume storms versus 1976. However, as in the 2016 analysis above, many of the overflows at the regulators in the Chicopee in the analysis of the 1976 storm series are close to the model's lower threshold for spills. When the general rainfall parameters (2016 experienced more frequent high intensity storms but fewer high volume storms) are evaluated in tandem (since CSOs are a product of both storm intensity and volume), the CSO frequency and volume results are comparable with expectations.

2.4 Conclusions

An analysis of the rainfall patterns measured in 2016 indicated moderate correlation across all of the rainfall gauges among most of the total rainfall depth and intensity categorizations. As previously stated, the results of RG02 were removed from the analysis, given the significant discrepancy in its reported rainfall as compared to gauges 1, 3 and 4. Comparison of the 2016 rainfall data to the typical year (1976) rainfall categorization showed 2016 to be a drier than average year, with a total median depth of rainfall approximately 27% lower than the typical year annual depth. The total number of storms, however, was not significantly different with a median number of 79 storms, only 4% lower than the typical year storm count (82). The reduction in storms, however, was concentrated in the lower total depth and peak intensity ranges. The 2016 rainfall data shows an increase in total depth storms in the 0.26 to 0.50-in range, as well as an increase in peak intensity in the 0.10 to 0.25-in/hr range. These two ranges are both likely to activate CSOs (on the CRI system); therefore, the combination of the significant increases may result in more common CSO regulator activation. It has become clear through previous iterations of flow metering review that CSOs, by their natures, in Springfield respond to shorter, more intense rainfall. With higher intensities observed in the 0.10 to 0.25-in/hr range, it is probable that wet weather responses likely to activate CSO regulators may be more common. When the rainfall depth and rainfall intensity characteristics (2016 experienced more frequent high intensity storms but fewer high volume storms versus 1976) are evaluated in tandem (since CSOs are a product of both storm intensity and volume), the CSO frequency and volume results in 2016 versus 1976 would be expected to be comparable.

The 2016 CSO monitoring program produced moderate correlation between the observed and modelled spill events throughout the CRI system. However the collection system model continues to over-predict the individual and total spill volumes throughout the CRI system, though with the CSO 012 and 015B meters being out of service for 6 months, a system-wide assessment count cannot be as readily made. Having the meters fully operating, in conjunction with a better understanding of the hydraulic grade line in the Connecticut River Interceptor would provide the additional data necessary to more thoroughly understand the relationship amongst the various CSOs along the CRI system.

With respect to the MRS, an analysis of overflow measurements versus the model predictions indicate that in many cases the size of the overflows at the regulators in the MRS are close to the model's threshold for identifying spills and hence the difference in overflow activations. Furthermore, the sensitivity of the vortex valves magnifies differences in overflows particularly when magnitudes are small as is the case in the Mill River system.

The spill count throughout the Chicopee system remains low in the model predictions, and many reported CSO occurrences fall below or are near to the model's lower threshold for identifying spills. Furthermore, CSO volume at two locations is influenced by stormwater connections unaccounted for in the model predictions, which explains much of the CSO volume disparity in this system measurements versus predictions.

In future annual analyses, the entire SWSC collection system will benefit from analysis that will be performed on an improved network that includes all pipes 18-in diameter and larger in addition to all associated manholes with those pipes. This upgrade has been performed as of December 2016. The expansion of the model will provide a more accurate representation of the distribution and timing of flow throughout the entire collection system.

It must be noted that the limits of current technology, the variability of rainfall, reliability of data collection and the accuracy of the model all have a bearing on the ability to achieve high correlation between systems.

2.5 Recommendations

- Continued permanent flow metering program at CSO outfalls;
- Temporary metering of level in the CRI along its length from Washburn PS to York Street PS, but particularly in the vicinity of CSO 10 Southeast to CSO 12-13.;
- Temporary targeted metering program in the immediate vicinity of MRI and Chicopee regulators to better understand discrepancies in measurements versus predictions
- Assessment of Rain gauge RG02 with ADS for any potential improvements after review of initial 2017 rainfall results (first quarter of 2017);
- Continued periodic field inspection of the vortex throttle structures on the MRS system (CSO 017, 025, 045, 046 and 048) and cleaning maintenance as necessary;
- Continued cleaning and assessment program to continue to improve collection system performance. Tie maintenance locations to collection system mapping to add context to variations in the model predictions versus measurements;
- Review of 2016 results with 2016 metering results after model extension up to pipes 18" diameter and larger under the system assessment program;

- First quarter analysis of meter results for the CRI to assess and changes in the flow balance between CSO 010, 012, 013, 014, 15A/B and 016 given field investigation findings and subsequent maintenance at CSO 012-013 regulator.

Section 3 CMOM Program Implementation

The SWSC's CMOM Program has been designed to help ensure that components of the collection system are cleaned and inspected at the right frequency and that preventative maintenance and repairs are performed to cost-effectively reduce the number of sewer releases (SSOs), extend the useful life of the SWSC's collection system infrastructure, and properly manage collection system operations. Pursuant to Administrative Order Docket No. 08-037 (AO), the SWSC submits the following CMOM Program Implementation Report for 2016. This annual summary will provide a brief overview of collection system operation and maintenance programs and practices as a context for evaluation of the effectiveness of CMOM activities.

3.1 Collection System – Gravity Sewer Operation and Maintenance

The SWSC has programs in place to help ensure that gravity sewers and manholes are properly inspected, cleaned, and repaired. Closed-circuit television (CCTV) inspection activities are key for an accurate determination of the structural and operational condition of the SWSC's collection system assets. Cleaning helps maintain asset condition and hydraulic capacity, enhances effectiveness of assessments, and helps control odors. Repairing structural deterioration protects the rate payer's investment and reduces the potential for catastrophic failures.

3.1.1 Sewer Inspections and Cleaning

The SWSC's inspection and cleaning program contains both preventative maintenance and unplanned work.

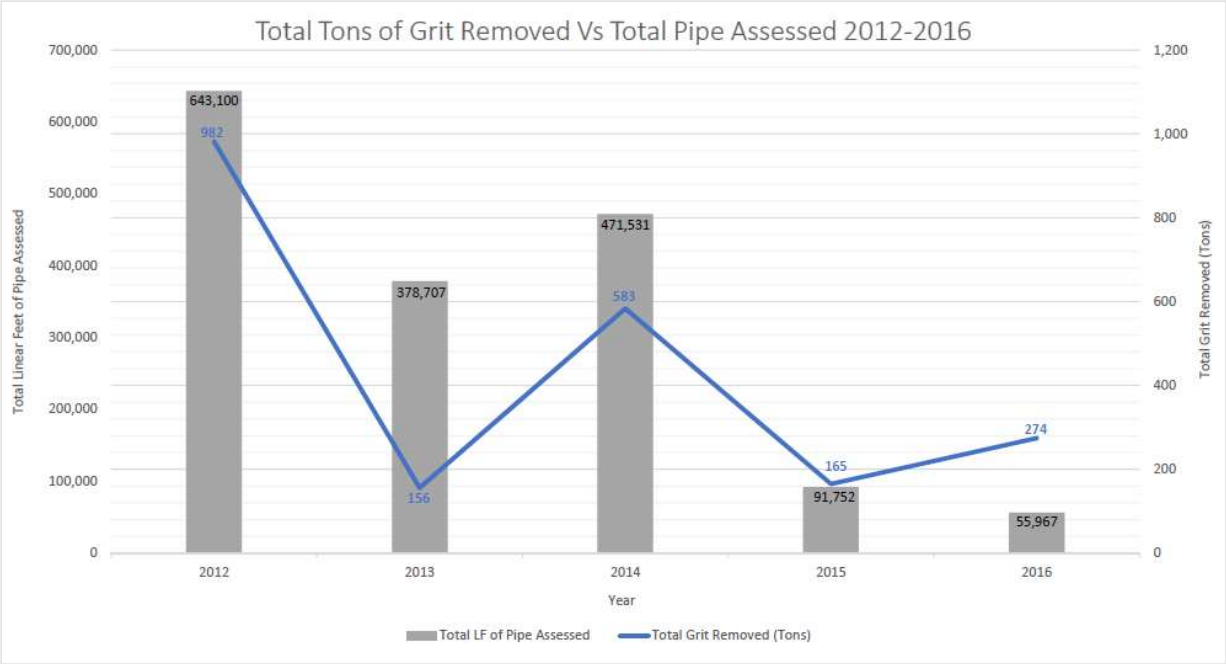
In CY 2016, the sewer inspection program inspected 82,971 linear feet of mainline sewer pipe, which corresponds to approximately 3.4 percent of the mainline sewer system. In total, since the SWSC's Pipeline Cleaning and Assessment Program began in 2009, approximately 1,943,000 linear feet of mainline sewer pipe, corresponding to approximately 79.7 percent of the mainline

sewer system, has been assessed to date including CY 2016. This figure does not include the assessment of recently installed or rehabilitated pipes that require assessment as part of their post installation acceptance.

The CY 2016 SWSC's Pipeline Cleaning and Assessment Program continued to focus on many of the most difficult assets to clean and inspect in the SWSC's inventory, which are sewer siphons and easement pipes. The greatest challenge of cleaning and accessing the sewer siphons and easement pipes were, despite vegetation clearing efforts, was the contractor's inability to obtain direct access to the work areas with the vacuum trucks. In this scenario, the contractor must manually extract the grit from manholes during cleaning operations with buckets and transport the grit with utility vehicles to a vacuum truck on a nearby street. In addition to the challenge of extracting the grit from these siphon and easement pipes, they typically contain a larger volume of grit than pipes located within the streets of the SWSC wastewater collection system, which further delays the cleaning and assessment operation in these areas. These hard to reach assets took longer to clear and thus reduced productivity and the total annual footage of pipe cleaned and assessed.

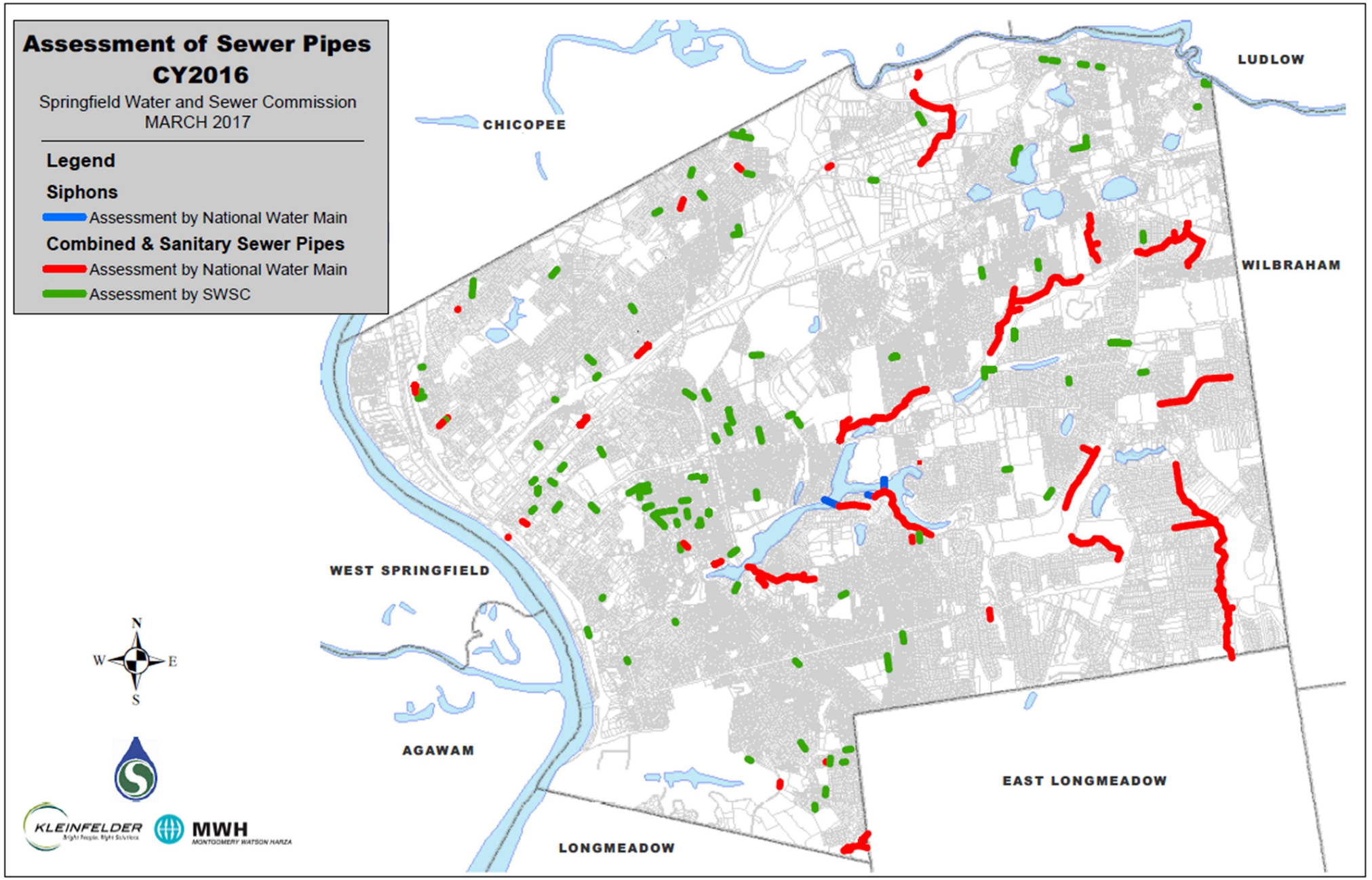
Figure 3-1 Grit Extracted from Cross Country Easement Pipe

Figure 3-2 Total Tons of Grit Removed Vs Linear Feet of Pipe Assessed 2012-2016



Sewer mainlines are assessed for general preventative maintenance, in support of chemical and mechanical root and grease management programs, in response to sewer problems, and in support of the continued development of the SWSC's Pipeline Infrastructure Improvements Rankings (PIIR). The SWSC's PIIR is used to support the continued development and maintenance of the SWSC's Capital Improvements Program. Appendix A includes the updated PIIR. The SWSC's staff, consultants, and sub-contractors are trained and licensed in NASSCo's Pipeline Assessment Certification Program (PACP) and Manhole Assessment Certification Program (MACP). PACP and MACP standards are used to evaluate the structural and operational condition of the pipelines. This information, in turn, is used to develop metrics to inform two of the SWSC's Risk Model failure modes, Structural Utility Condition Index (SUCI) and Maintenance Utility Condition Index (MUCI).

In CY 2016, the assessment was considered either unplanned work; that is, work in response to special sewer investigations or collection system problems or was dedicated to preventative maintenance support of the SWSC's Root Removal Program, Grease Removal Program, Spot Repair Program, and its CIP Sewer Rehabilitation Projects (as informed through the PIIR). The CCTV assessment program provides the condition assessment information that is instrumental to the risk prioritization process utilized to drive the various programs' work.


Assessment of Sewer Pipes
CY2016
Springfield Water and Sewer Commission
MARCH 2017
Legend
Siphons
Assessment by National Water Main
Combined & Sanitary Sewer Pipes
Assessment by National Water Main
Assessment by SWSC
CHICOPEE
LUDLOW
WILBRAHAM
WEST SPRINGFIELD
AGAWAM
LONGMEADOW
EAST LONGMEADOW
N
W
E
S
KLEINFELDER
MWH
MONTGOMERY WATSON HARZA

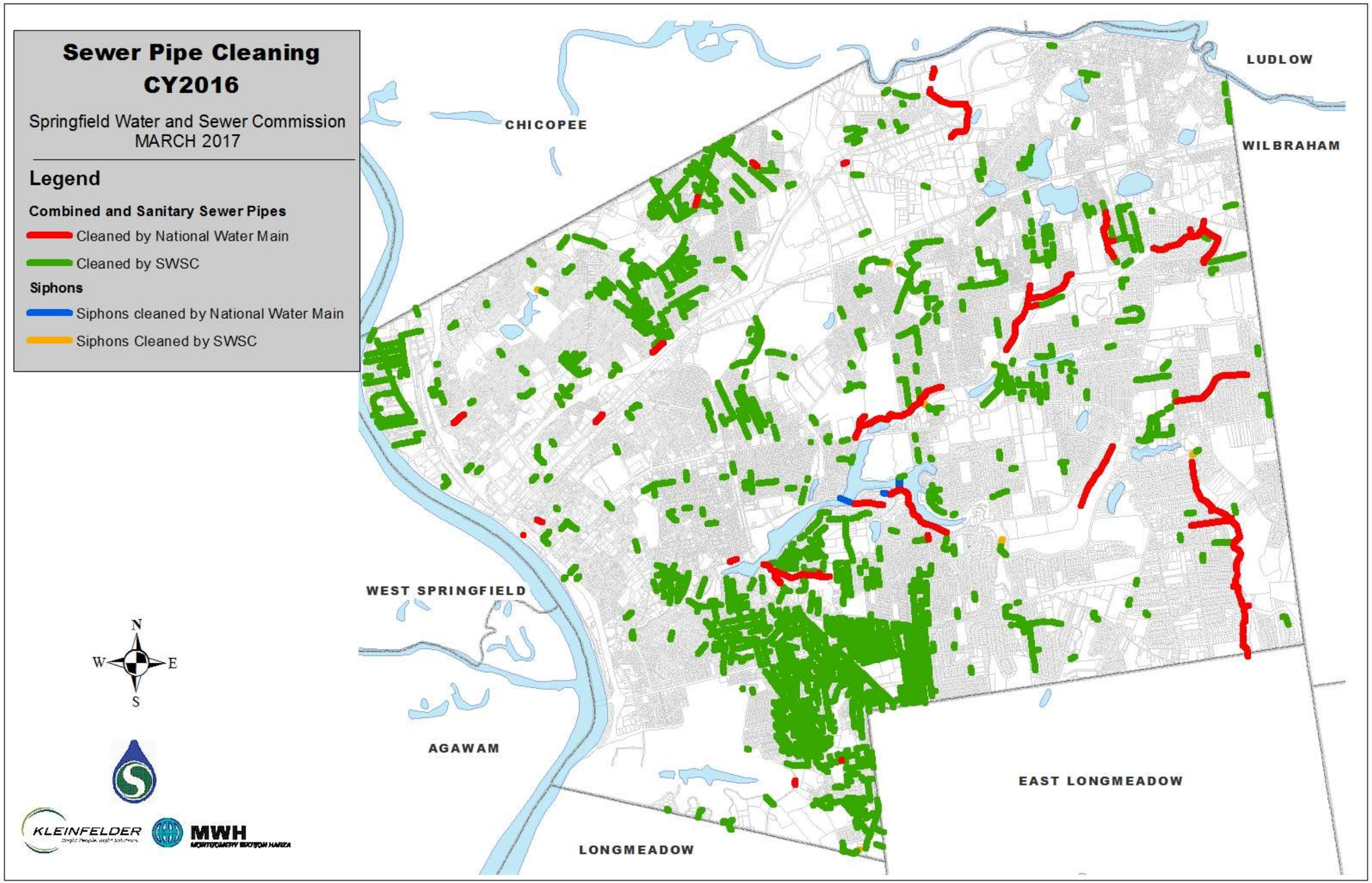
In CY 2016, the sewer cleaning program, often done in conjunction with the pipeline assessment program, cleaned 997,003 linear feet of pipe. This total is comprehensive of all unique and repeated cleaning of pipeline assets as required to maintain the level of service in the collection system throughout the year. Of this 997,003 linear feet, a total of 460,003 unique linear feet of pipeline cleaning was conducted in CY 2016, which corresponds to approximately 40.2 percent of the mainline system. Over 1,236 Tons of grit were removed by the SWSC's crews and Contractor in CY 2016. In total, since the SWSC's Pipeline Cleaning and Assessment Program began in 2009, and including CY 2016, 1,820,181 linear feet of unique mainline sewer pipe, corresponding to approximately 74.7 percent of the mainline sewer system, has been cleaned by the SWSC's sub-contractors alone. The CY 2016 SWSC's Pipeline Cleaning and Assessment Program continued to focus on many of the most difficult assets in the SWSC's inventory, which are sewer siphons and easement pipes. See Table 3-1 for a breakdown of the SWSC's sub-contractor's CY 2016 metric.

Table 3-1 Pipeline Cleaning Completed under Subcontract to Commission

CONTRACT CLEANING		
Size of Pipe	***Type of Cleaning***	***Linear Footage***
6" - 12"	Light Cleaning	585
13"-20"	Light Cleaning	563
21"-29"	Light Cleaning	0
30"-39"	Light Cleaning	47.9
40"-49"	Light Cleaning	0
>49"	Light Cleaning	0
6" - 12"	Medium Cleaning	665
13"-20"	Medium Cleaning	641
21"-29"	Medium Cleaning	1,632
30"-39"	Medium Cleaning	236
40"-49"	Medium Cleaning	7
>49"	Medium Cleaning	0
6" - 12"	Heavy Cleaning	2,703
13"-20"	Heavy Cleaning	3,259
21"-29"	Heavy Cleaning	7,692
30"-39"	Heavy Cleaning	3,708
40"-49"	Heavy Cleaning	228
>49"	Heavy Cleaning	0
Pipes more than 1/4 Full	Heavy Cleaning	29,998
Sewer Siphons	Heavy Cleaning	2,716
TOTAL FOOTAGE		**54,681**

The sewer cleaning program includes preventative maintenance through grit removal, chemical and mechanical root removal, and accelerated cleaning in grease management areas. The SWSC primarily uses a specialty contractor to clean siphons and hard to reach and hard to access easements.

In 2016, all mainline cleaning work was considered planned maintenance.


Sewer Pipe Cleaning
CY2016
Springfield Water and Sewer Commission
MARCH 2017
Legend
Combined and Sanitary Sewer Pipes
Cleaned by National Water Main
Cleaned by SWSC
Siphons
Siphons cleaned by National Water Main
Siphons Cleaned by SWSC
CHICOPEE
LUDLOW
WILBRAHAM
WEST SPRINGFIELD
AGAWAM
LONGMEADOW
EAST LONGMEADOW
N
W
E
S
KLEINFELDER
MWH

The SWSC has an in-line grit removal system on the Connecticut River Interceptor (CRI) maintained by contract operator Suez. In CY 2016 Suez removed over 57 Tons of grit from the Clinton Street Grit Pit. The removal of this material increased the capacity and level of service in the CRI by capturing the material before it was deposited in the pipe.

Compared to the sewer mainline pipes, the majority of manholes in the combined and sanitary collection system have not been shown to pose unusual or alarming structural or infiltration and/or inflow hazards. Therefore, in keeping with the SWSC's risk-based asset management strategy, manholes are inspected and cleaned during preventative maintenance of the sewer mains. 1,155 manholes were assessed in CY 2016.

3.1.2 Sewer Assessment and Repairs

Maintaining the wastewater collection system in good repair is a core service the SWSC provides to its rate payers. The SWSC has a well-established sewer mainline and manhole repair program. Each year as data is collected from the pipeline assessment program, structural condition and maintenance condition data is added to the Risk Model which is then in turn used to develop the Prioritized Infrastructure Improvements Ranking. From this list, the SWSC and its consultants assemble project(s) which are designed, bid and constructed. The project(s) include elements of pipeline replacement, renewal, and rehabilitation depending on the suitability of the technology, benefits, impacts and cost. Also from the list, the SWSC's own crews proactively addressed many of the spot repair and pipeline replacement needs identified in the PIIR.

During CY 2016, for minor urgent or emergency repairs, the SWSC relied preferentially on the services of SWSC crews.

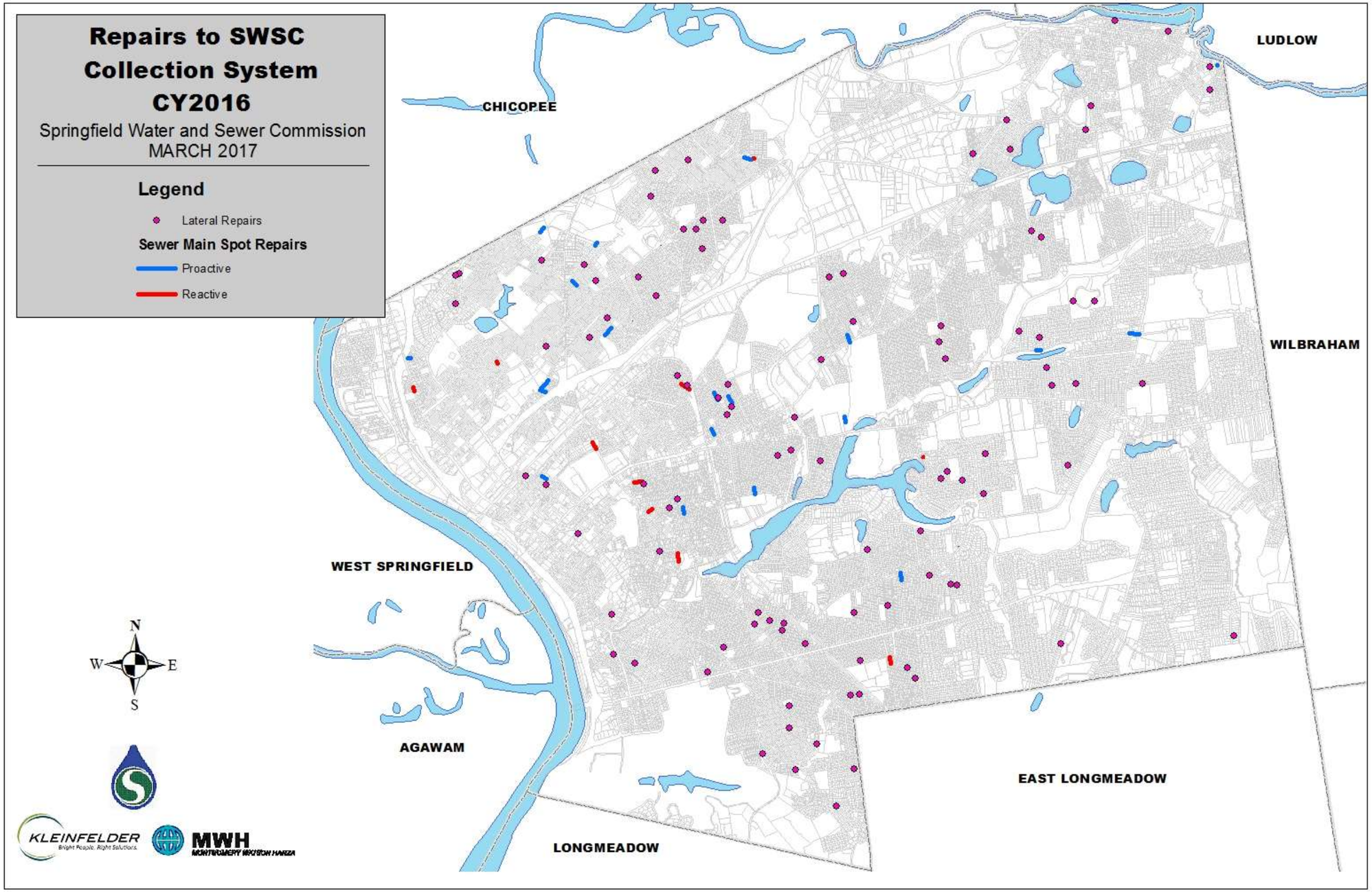
The SWSC continued its commitment to extend the useful life of the existing infrastructure where feasible by utilizing the latest pipeline rehabilitation technologies. Over 1,340 linear feet of pipeline was replaced, 9,876 linear feet of pipeline was rehabilitated or renewed, and 100 sewer manholes were replaced or rehabilitated/renewed utilizing contracted design and construction services. In addition, SWSC crews completed 40 mainline sewer repairs totaling nearly 1,829 linear feet. Approximately 43 percent of these repairs were unplanned. Repairs are considered unplanned if the work is in response to a collection system problem such as a sewer release, sinkhole, or the severity of the problem is significant enough to warrant the deployment of repairs within a week. Repairs on mainline sewers include sewer replacements and localized spot repairs where pipe sections are excavated and replaced or renewed using a trenchless rehabilitation technique.

The SWSC's crews also completed repairs to 100 service lateral, totaling approximately 1,786 linear feet. All of these repairs were unplanned. Unplanned sewer service lateral repairs are

always in response to a sewer system problem. Planned service lateral repairs typically occur in conjunction with adjacent repairs on mainline sewers.

Table 3-2 General Quantities – Wastewater Collection System Infrastructure Replaced and Rehabilitated CY 2016

		2014 Contract	2015 Contract	2016 Contract	MGM Project	MIS Project	Sub-Total	Total	General Description
Item	**Units**	**Quantities**							
MH Rehab	Each	5	45	20	6	9	85	100	Manholes Replaced or Rehabbed
New MH	Each			5	5	5	15		
10-in	LF			18			18	1340	Sewer Pipe Replaced (LF)
12-in	LF		156			134	290		
15-in	LF		10	273			283		
18-in	LF			251			251		
24-in	LF					13	13		
30-in	LF					27	27		
48-in	LF					458	458		
10-in CIPP	LF			2655	1295		3950	9876	Cured-in-Place Pipelining (LF)
15-in CIPP	LF		539				539		
18-in CIPP	LF		842				842		
30-in CIPP	LF			314			314		
34-in CIPP	LF			1442			1442		
36-in CIPP	LF			152			152		
48-in CIPP	LF					389	389		
60-in CIPP	LF					2248	2248		


Repairs to SWSC
Collection System
CY2016
Springfield Water and Sewer Commission
MARCH 2017
Legend
Lateral Repairs
Sewer Main Spot Repairs
Proactive
Reactive
CHICOPEE
LUDLOW
WILBRAHAM
WEST SPRINGFIELD
AGAWAM
EAST LONGMEADOW
LONGMEADOW
N
W
E
S
KLEINFELDER
MWH

3.1.3 Root Management and Control Actions

The SWSC understands the need to balance urban tree plantings with proper maintenance of its collection system infrastructure. During CY 2016, the SWSC managed the chemical and mechanical root control program using a third-party service provider. The contractor used a dense herbicidal foam that kills roots on contact without harming the surface vegetation. The SWSC's Root Control Program uses a priority ranking system to target and address the sewer mainline pipes within the collection system with the greatest need for chemical root treatment. During CY 2016, 41 individual segments of mainline sewer were chemically or mechanically treated for roots. At times, the SWSC's crews and subcontractors utilized mechanical root saws to locally remove roots in support of sewer inspection and cleaning activities as well as in response to sewer system problems.

3.1.4 Grease Management and Control Actions

In response to the number of blockages caused by grease and in order to maintain compliance with U.S. EPA regulations, the SWSC has been implementing a Fats, Oils and Grease (FOG) Program to educate residential customers on the hazards of grease clogs in the sewer system. The educational program called *"Cease the Grease Springfield"* is comprised of informational fliers, posters and on-site presentations at civic association meetings; condominium, rental and housing associations; and other public forums throughout the city. The goal of the program is to educate residents to understand that the proper disposal of grease and other FOG forming foods is in the garbage, rather than in the sink or toilet.

The SWSC also has a flyer for Best Management Practices for Food Establishments.

The SWSC's Rules and Regulations prohibit the disposal of FOG to the collection system in amounts greater than 100 mg/L or in amounts which may result in restricted flow. The efforts made by the SWSC in controlling FOG have resulted in a program of proactive inspection of pipes known to have reoccurring FOG issues. Food service establishments are also required, per the SWSC's Rules and Regulations, to perform their own routine inspections, maintenance and record keeping. The SWSC reserves the right to inspect all facilities. Further, enforcement actions on FOG reoccurring violations, particularly with food service establishments and commercial/industrial generators have proved to be effective at improving FOG issues throughout the collection system.

Accelerated Grease Cleaning Areas (AGCAs) are established based on grease problems identified through maintenance activities, preventative maintenance cleaning and CCTV assessment, and sewer release/back-up response activities.

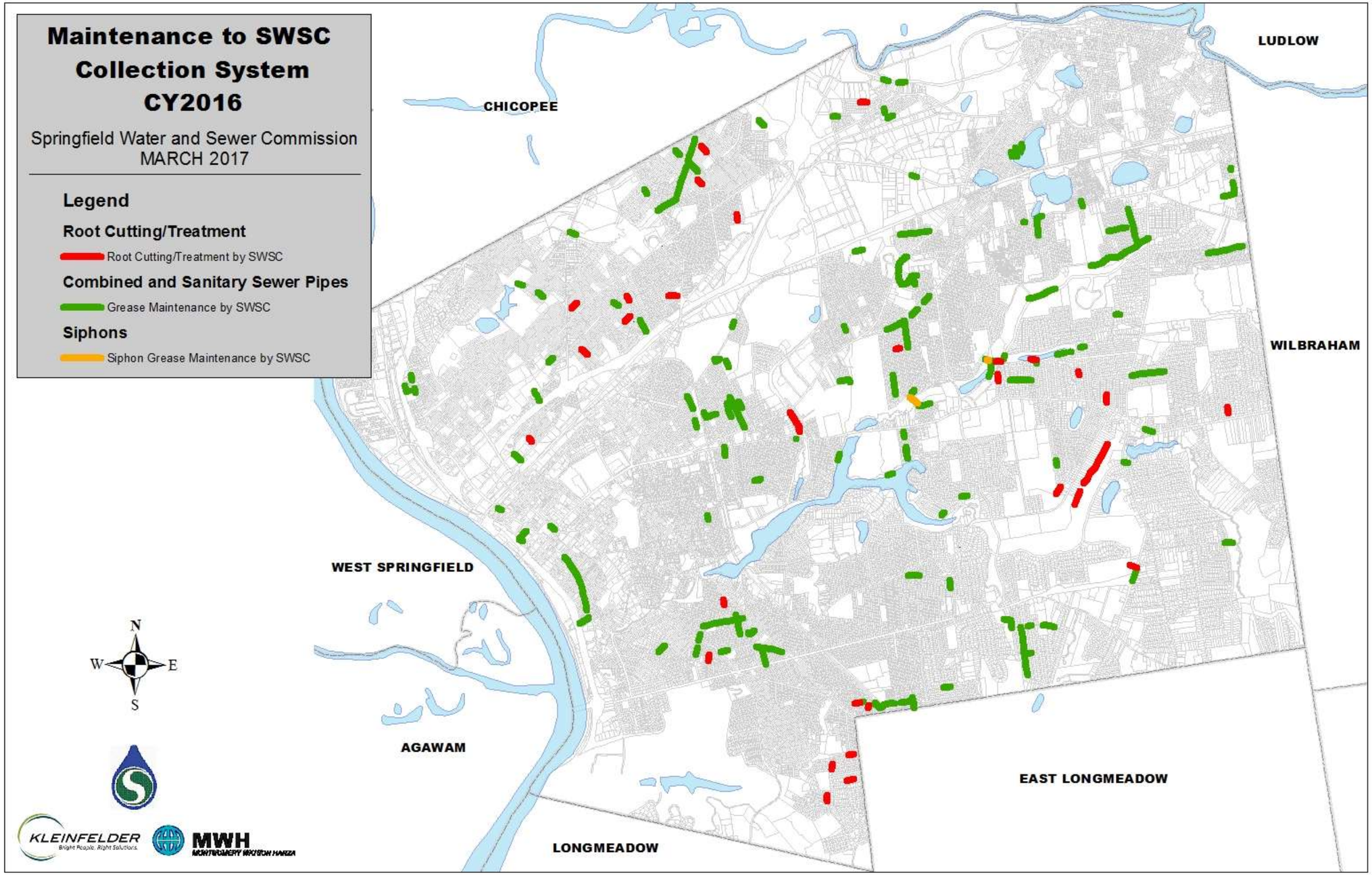
Routine investigations in areas of known FOG issues, performed by SWSC crews provides evidence needed for FOG enforcement actions. When a FOG discharge is identified, the SWSC

may issue a Notice of Violation and will require the food service establishment to eliminate all FOG discharges, which is generally achieved by retrofitting the facility with a grease interceptor and plumb fixtures to the interceptor. The SWSC's inspection and enforcement, along with proactive retrofitting requirement for new and redevelopment food service establishments, significantly minimizes the potential for future FOG build-up and blockages in the collection system from these facilities.

The SWSC's Grease Control Program uses a priority ranking system to target and address sewer mainlines in the collection system with the greatest need for chemical and/or traditional cleaning. During the CY 2016, over 220 individual segments of mainline sewers were cleaned specifically for FOG by SWSC crews as part of their collection system cleaning program along with 39 individual segments of mainline sewers that were chemically treated for significant localized FOG issues.

In addition to FOG, there is a new concern in the sewers: "disposable" wipes. Cleaning wipes, baby wipes, and other wipes that are sometimes described as "disposable" or "flushable" generally do not dissolve when flushed. Instead, they accumulate in sewer systems causing clogs and backups. The SWSC distributes a brochure to their customers that outlines the concerns of flushing items other than human waste and toilet paper. The brochure identifies disposable wipes, paper towels, diapers, feminine products, dental floss and cotton balls as products that are unsuitable to be flushed down toilets and explains that flushing these products can result in costly sewer backups.

Figure 3-3 Wipes Clog Pipes Brochure


Maintenance to SWSC Collection System CY2016
Springfield Water and Sewer Commission
MARCH 2017
Legend
Root Cutting/Treatment
Root Cutting/Treatment by SWSC
Combined and Sanitary Sewer Pipes
Grease Maintenance by SWSC
Siphons
Siphon Grease Maintenance by SWSC
CHICOPEE
LUDLOW
WILBRAHAM
WEST SPRINGFIELD
AGAWAM
LONGMEADOW
EAST LONGMEADOW
N
W
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S
KLEINFELDER
MWH

3.1.5 Rainfall Derived Inflow and Infiltration Assessment and Removal

The SWSC has now assessed over 79% of the wastewater collection system since 2009 and maintains an extensive inventory of CCTV videos and PACP coded defect databases which are being leveraged to identify specific locations in the collection system where infiltration and inflow (I/I) is prevalent. In accordance with MassDEP's request for communities to complete a Sanitary Sewer Evaluation Survey (SSES) by the end of CY 2017, the SWSC is working to incorporate the valuable data relating to I/I that has been collected through pipeline assessments and system flow metering periods into the upcoming survey. The SWSC has over 25 permanent flow meters located throughout the collection system that have been collecting data on a continuous basis since 2004 as part of their CSO monitoring program and the data is reviewed monthly.

The SWSC has periodically conducted more robust metering programs, targeting not only its CSO regulators but areas throughout the combined and separated systems confirming collection system performance. In 2009/2010, over 40 meters were installed and monitored during various wet weather periods and again in 2013, 2014, and 2015 a total of 44 flow meters and 20 rain gauges were installed in numerous seasonal programs. Data from these metering efforts was used to develop the LTCP for CSO control, whose improvements have been carried forward in the Integrated Wastewater Plan (IWP).

By the end of CY 2017, the SWSC will submit an I/I analysis report, as well as Phase I and Phase II SSES reports to MassDEP outlining the progress of the I/I initiative within the system. Focus on the removal of I/I from the SWSC wastewater collection system will continue to increase following the completion of rehabilitation projects of critical pipes with severe structural defects. In addition, the full database of pipeline PACP coded defects will allow SWSC to prioritize rehabilitation and repairs based on I/I potential, ultimately incorporating this data into its current risk model.

Many of the repairs and replacements performed by SWSC crews and the larger replacement, renewal and rehabilitation projects performed by SWSC contractors on an ongoing basis have addressed areas with structural failure, which by their nature were sources of infiltration into the collection system. The projects all include new pipe and manholes as well as the rehabilitation and renewal of existing pipe and manholes.

Suez, in their role of contract operator of the SRWTF, the Combined Sewer Overflows, and the Flood Control System, has conducted annual inspections of the flood control/inflow structures on the combined sewer system as required by NPDES Permit No. MA0103331. Suez also routinely monitors flow data recorded at the SRWTF and contributing communities and any irregular or increased flows are investigated.

Appendix B attached to this Section includes letters from the communities which are serviced by the SRWTF, confirming their continued compliance with 314 CMR 12.07 (6) which requires wastewater collection system operators to report annually on new sewer system connections and I/I work conducted during the reporting period. Letters from East Longmeadow, Longmeadow, Ludlow, Agawam, Wilbraham, and West Springfield are included in Appendix B to this Section.

3.1.6 Collection System Mapping

Since 2009, the SWSC continues to advance its efforts to develop and refine its collection system mapping. Typical annual activities include updating the sewer book, completing sewer service cards for new/replacement services, and improving the wastewater collection system ArcGIS geodatabase.

In CY 2016 940 manholes in the collection system were located by GPS. As a result, 1,081 manholes and 1,327 pipe segments were geospatially updated and asset attributes were also updated. Also, in CY 2016 a layer was created for the 36 wastewater siphons that exist within the collection system throughout the City.

The SWSC maintains a detailed sewer book (i.e. its wastewater collection system atlas) that covers the entire collection system. This document continued to be updated frequently in CY 2016 as changes were made to the collection system or as record discrepancies were discovered.

3.1.7 Records/Digital Archive

In 2012, the SWSC and its consulting engineers scanned over 26,000 archived plans and geospatially linked 20,000 of them to the assets in the GIS system. The SWSC continues to expand this program with the goal of digitally archiving and geospatially linking all record documents. In 2014, the SWSC began integrating these documents into the new asset management software. In 2015, 42,290 sewer service tie cards were also attached to service/address points in the GIS for easy access and reference. In CY 2016, digital archiving efforts were focused primarily on digital archiving of paper documents for the SWSC's Water Distribution system, with a small quantity of documents for recently completed "as-built" construction plans being linked to the wastewater collection system GIS. In 2016, all linked documents were made available to the SWSC's operations and maintenance crews through its asset management and maintenance software system.

3.1.8 Work Order Management and Computerized Maintenance Management System

In CY 2016 the SWSC continued to customize and refine its newly implemented asset management and maintenance software, VUEWorks. Among many powerful aspects of this software, this system serves as the basis for tracking SSOs and other important operational parameters. Through various reporting functions, trends can be tracked real-time which serves to inform SWSC leadership on the success of the various programs. The system continues to be further refined as more users throughout the SWSC continue to be added and trained. In CY 2016, the SWSC worked with VUEWorks in the development of a user interface tool which can be used to facilitate the interaction of the VUEWorks work management system with the SWSC's customer billing system. We anticipate this tool being completed and implemented into the SWSC's workflows early during CY 2017.

3.1.9 Easement Maintenance Programs

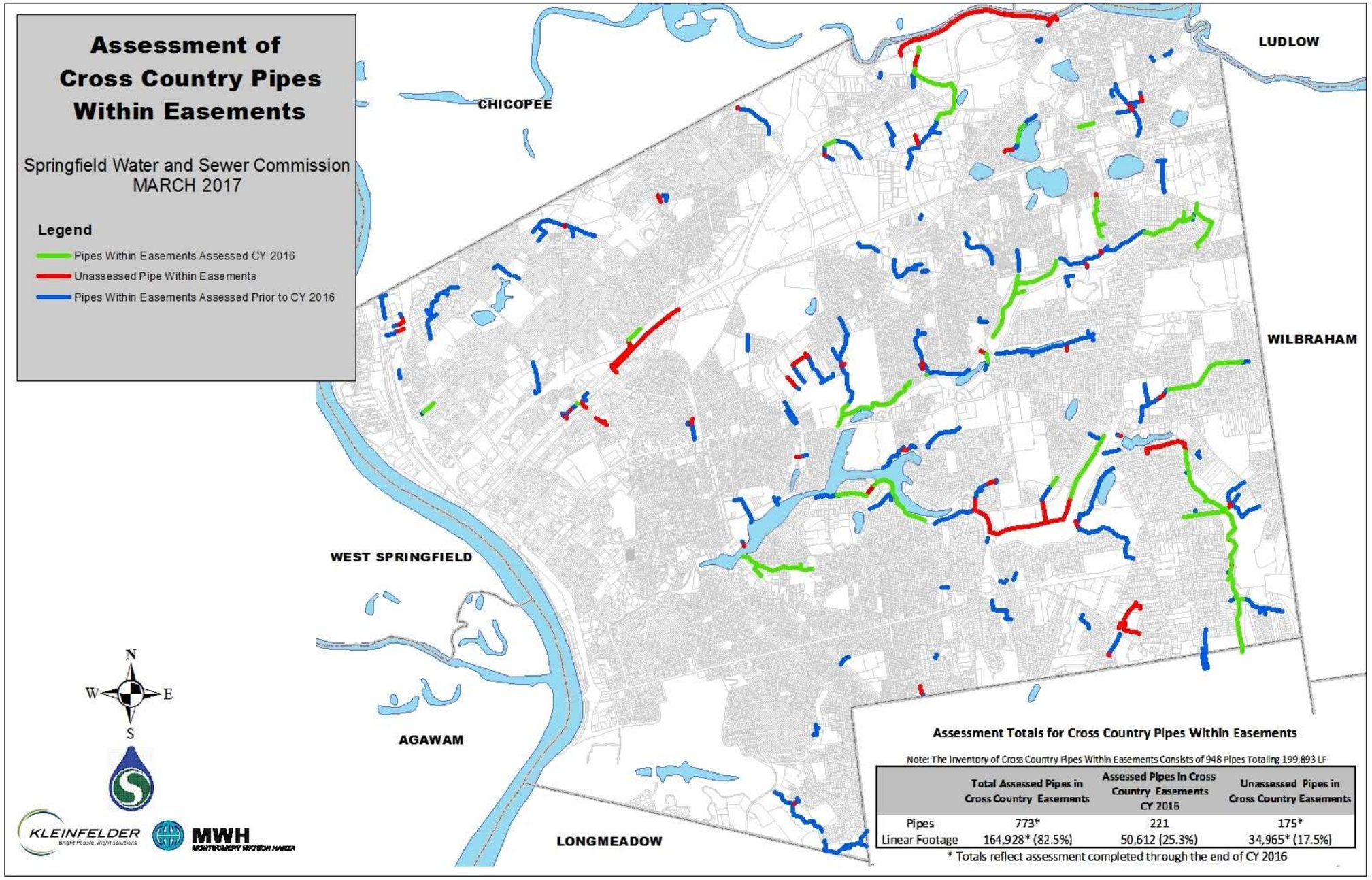
In 2014 the SWSC began identifying all of the cross country easement collection system assets. There are 950 pipe segments in the SWSC collection system outside of the street right of way, totaling 193,500 linear feet. The CY 2014 - CY 2016 Pipeline Cleaning and CCTV Assessment Program have almost exclusively focused on cleaning and assessing these cross country and easement assets. During CY 2016, 221 pipes within cross country easements were assessed totaling 50,612 linear feet. Overall, since the start of the SWSC's Pipeline Cleaning and Assessment Program, 82% of the pipes within cross country easements have been assessed.

During this program the need to further maintain access through these historically hard to reach assets was further identified. A register of easement assets requiring clearing, access improvements, and easement maintenance was developed. This register is being used to develop short and long term maintenance plans for these easements. A line item for maintaining vegetation in SWSC cross country collection system easements continues to be carried in the operations budget.

A capital project for clearing, access improvements and easement maintenance was implemented in FY2016 (July 2015 through July 2016) and an equivalent project is underway in FY2017 (July 2016 through July 2017). During CY 2016 approximately 570,000 square feet within 6 of the SWSC's collection system cross country easements were cleared of vegetation

and other illicit features specifically to enable access for the SWSC's Pipeline Cleaning and Assessment Program. Clearing of SWSC collection system easements is critical to the efficiency of SWSC's Pipeline Cleaning and Assessment Program and future access within the easements for planned and emergency maintenance/repairs.

The SWSC also continues to track existing and install new visible sewer markers on cross country sewers and at hard to find manhole locations. The SWSC installed 50 of the visible sewer markers during CY 2016. The locations of these markers is maintained in the VUEWorks database.


Assessment of
Cross Country Pipes
Within Easements
Springfield Water and Sewer Commission
MARCH 2017
Legend
Pipes Within Easements Assessed CY 2016
Unassessed Pipe Within Easements
Pipes Within Easements Assessed Prior to CY 2016
CHICOPEE
LUDLOW
WILBRAHAM
WEST SPRINGFIELD
AGAWAM
LONGMEADOW
N
W
E
S
KLEINFELDER
MWH
Assessment Totals for Cross Country Pipes Within Easements
Note: The Inventory of Cross Country Pipes Within Easements Consists of 948 Pipes Totaling 199,893 LF
Total Assessed Pipes in Cross Country Easements
Assessed Pipes in Cross Country Easements CY 2016
Unassessed Pipes in Cross Country Easements
Pipes 773* 221 175*
Linear Footage 164,928* (82.5%) 50,612 (25.3%) 34,965* (17.5%)
* Totals reflect assessment completed through the end of CY 2016

Section 4 Sewer Release Analysis and Performance

The SWSC's Corrective Action Plan (CAP) continues to be implemented as it advances all of the major components of the CMOM Program. In addition to the information provided in the prior section regarding the CY 2016 CMOM implementation efforts, this section outlines the elements of system reinvestment and risk reduction through the Wastewater Operations budget for 2016. The SWSC's CAP and CMOM establishes the process for responding to sewer releases from the combined and sanitary sewer system. Reporting to MADEP is in conformance with the SWSC's NPDES Permit.

The SWSC continues to improve its implementation of best management practices for collection system operation and maintenance to reduce the number and severity of sewer releases. Under the CMOM Program, additional emphasis is placed on understanding why releases have occurred and how to prevent future releases.

4.1 Sewer Release Tracking and Reporting

Based on conformance with the CMOM Self-Assessment Checklist and improvements to reporting trends, the SWSC continues to see a steady decrease in the annual number of Sanitary Sewer Overflows (SSOs). With the SWSC's new Computerized Maintenance Management System (CMMS), VUEWorks, a connection between the work history and the assets is being made. Data controls continue to be improved and added to help manage work orders. Problem codes and standardization of planned and unplanned maintenance work types continue to be added to work orders and help develop histories, trends and valuable reports. Well-defined work codes help ensure that work related to sewer releases receives top priorities.

The SWSC tracks the causes of failures to facilitate the analysis of sewer releases as shown in Table 4-1.

Table 4-1 Sewer Release Cause Descriptions

Sewer Release Cause	Description
Structural Defect	Release caused by a physical failure of the pipeline
Equipment Failure	Release directly resulting from equipment failure typically either at a pump station or during a flow bypass
Maintenance	Release caused by SWSC-related maintenance activity
Weather Event	Release caused by a hydraulic capacity issue (not including CSOs which are permitted) associated with weather
Grease	Release caused by blockage primarily due to grease
Debris	Release caused by a soft blockage due to sediment or other material
Roots	Release caused by a blockage primarily due to roots
Cause Unknown	Release where the investigation does not identify a specific cause

The SWSC reports all SSOs that occur within the wastewater collections system in this report with the exception of Combined Sewer Overflows from permitted CSOs. Appendix A to this report includes a summary of all SSOs for CY 2016. Pursuant to the requirements of Administrative Order Docket No. 08-037 (AO), the following information is presented in tabular form:

- Date and Time of SSO
- Date and time SSO was resolved
- Location of SSO
- Source Notification
- Cause of SSO (see above)
- Measures taken to resolve SSO
- Date of the last SSO that occurred at the same location
- Estimated volume of overflow
- Discharge location

4.2 Sewer Release Key Performance Indicators

Striving for continuous improvement is a cyclical process of evaluating current practices, identifying needed improvements, and measuring performance. The SWSC uses a set of key performance indicators to gauge the effectiveness of the CMOM PROGRAM.

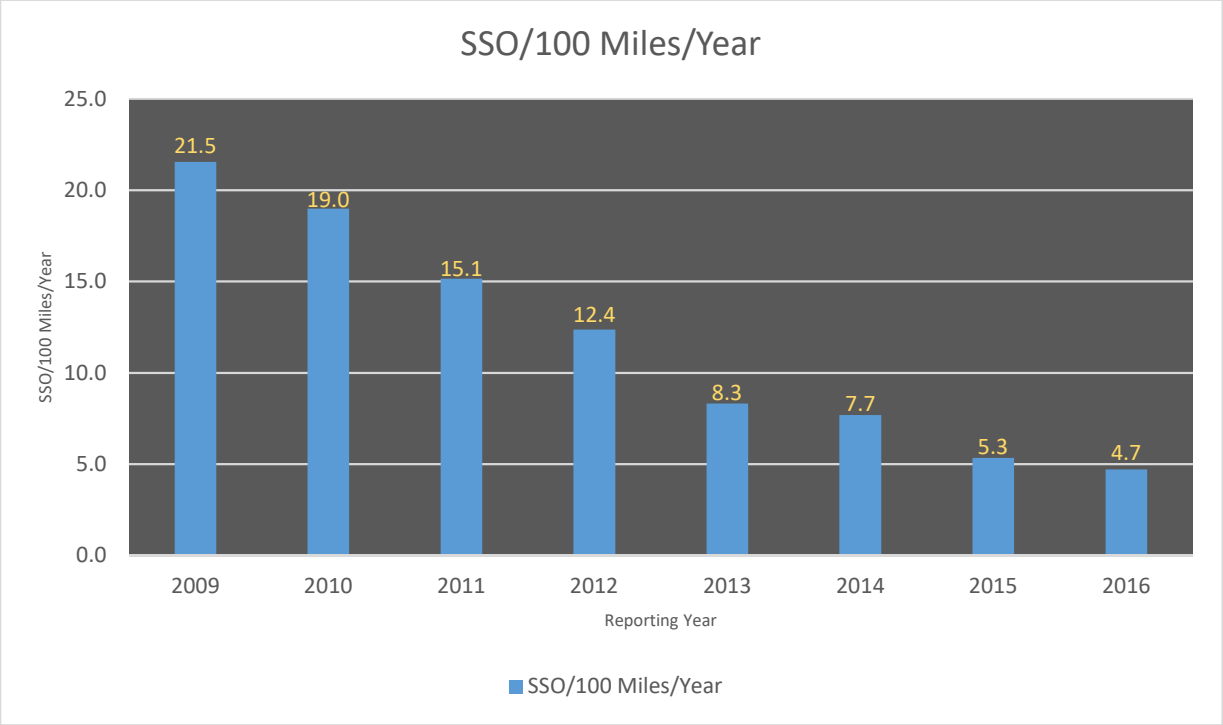
4.2.1 SSO Trends and SSOs per Hundred Miles of Pipe

SSOs provide a good measure of the overall effectiveness of maintenance programs for controlling roots, fats, oils, grease, structural failures and pump station performance.

In 2006 the SWSC recorded 141 SSOs. There has been a decrease in each of the past 9 years with 36 SSOs reported in 2014, 25 SSOs reported in 2015 and now 22 SSO's reported in 2016. This represents over an 84% decrease in SSOs since the initiation of this program and a 12% decrease from CY 2015.

Further, in addition to the overall trend of SSOreduction every year, the SWSC looks at the sewer overflow rate (SSOs per 100 miles of sewer) of their collection system as a metric for gauging overall success toward minimizing SSOs. The SWSC owns and operates 469 miles of mainline sanitary and combined sewers. At the start of the maintenance program in 2006, the sewer overflow rate was 30.1. During CY 2016 the SWSC experienced 22 SSOs over the 469 miles of collection system opposed to the 25 during CY 2015. Therefore, the SWSC reduced their sewer overflow rate to 4.7 SSOs/100 miles in CY2016, an over 12% decrease from the CY 2015 rate of 5.3 SSOs/100 miles. Figure 4-1 below demonstrates the trend of continuously decreasing sewer overflow rates from 21.5 SSOs/100 miles in CY 2009 to 4.7 SSOs/100 miles in CY 2016.

Figure 4-1 SWSC SSO/100 Miles/Year



4.2.2 Response to Urgent Health and Safety-Related Service Request

The SWSC's goal is for a sewer emergency crew to be on site within hours of receiving the initial call reporting an urgent sewer release and subsequently addressing the release and its root cause within the same day of the report. The SWSC is responsible for maintaining electronic records of sewer releases. These records are used to assess the response time of the on-site emergency crew as well as the time taken to address each issue. During CY 2016 the average time to resolve reported SSO's was approximately 2.5 hours. Under some circumstances, such as when a caller is reporting a release that happened in the past or is requesting to meet a SWSC crew at a pre-arranged time, a sewer release is considered non-urgent and the responsiveness goals do not necessarily apply.

4.3 Analysis of Causes and Locations of Sewer Releases

During CY 2016, the SWSC experienced 22 releases from the sanitary sewer system. There were 11 weather related SSOs during 4 separate rain events in CY 2016 where the flows exceeded the design capacity of the collection system (referred to as force majeure). All other wet weather releases during the year occurred at permitted CSOs. Output from the VUEWorks CMMS summarizing the SSOs as well as a Sewer Collection Work Summary are included in Appendix B. The release data shown is for releases due to problems in the SWSC-maintained portion of the collection system (excluding releases due to causes resulting from problems in privately-owned sewers or laterals). The locations of the sewer releases are shown in the Figure at the end of this section. Several factors likely contributed to the releases that were reported in CY 2016.

There are several reasons for the downward trend in sewer releases. As the Pipeline Cleaning and CCTV Assessment Program enters its eighth year, more areas for potential releases driven by main line sewer structural and maintenance conditions are being pre-identified through inspections performed by the SWSC's crews as well as its sub-contractors. As areas of historic grit deposition, grease, and root problems are identified and addressed, high intensity storms and wet weather events which may have caused problems in the past by inundating the capacity of the collection system no longer present the same problems, as the blockages or issues causing the capacity reduction have been addressed. Also, as the SWSC continues to address existing structural pipe failures, the threat of catastrophic pipe collapses has decreased and also I/I is being reduced, increasing the available capacity in the pipelines.

4.3.1 Sewer Release Causes for CY 2016

In addition to the rigorous investigatory research conducted by the SWSC to determine the cause of sewer releases, improvements continue to be made including the use of the VUEWorks CMMS to track initial and actual codes on work orders. This enhanced capability provides a clearer understanding of the underlying reasons why a problem occurred or why work on (or near) an asset was required. For example, a work order may be initially coded as a release or a back-up when the call is received. When the crew responds to the issue and performs its investigation and determines the actual problem is grease or roots, this is subsequently recorded on the work order.

Structural Defects. There were two sewer releases as the result of a structural defect in CY 2016. The first event occurred on February 26, 2016 on an interceptor sewer located within Saint Michael's Cemetery where a portion of the pipeline was found uncovered and exposed and discharging SSO through a failing portion of the exposed pipe. The second event occurred on April 4, 2016 on Roosevelt Avenue when a pipe collapsed resulting in a backup in the collection system.

The risk of release associated with structural defects will continue to decrease as the significant number of sewer repair, rehabilitation, replacement and renewal projects are completed. Furthermore, risk will continue to dissipate as a comprehensive database of structural defects throughout the collection system approaches fruition. At the end of CY 2016 the SWSC's Pipeline Cleaning and Assessment Program has assessed over 79% of the collection system. The continually expanding database of structural defects will enable the SWSC to continue to enhance prioritization of rehabilitation and replacement of pipes in their collection system.

Maintenance Defects. In CY 2016 there were no releases associated with maintenance activities. Maintenances activities can typically cause "blow back" where pressure from the SWSC sewer cleaning operations result in releases from plumbing on private property. SWSC crews and sub-contractors take precautions to prevent these occurrences especially where most private plumbing systems lack adequate venting and configuration. Other sources of maintenance flows can include CIPP lining bypass or service interruptions (services connected to pipelines were inadvertently not reinstated). Though handling flows during the SWSC's capital projects can be difficult, the SWSC and its engineer's and contractors thoroughly plan the rehabilitation activities such that bypasses are appropriately sized and all services are located and scheduled for reinstatement. This attention to detail has helped eliminate maintenance sewer releases during CY 2016.

Extreme Weather. Although the SWSC has a successful system of integrating its treatment plant and collection system operation to minimize wet weather events and although the SWSC does have permitted CSOs, localized, high-intensity rainfall event nonetheless resulted in multiple releases in CY 2016. One significant rain event occurred on August 2, 2016 when an

overflow exited a sanitary sewer manhole on Mill Street and entered the stormwater drainage system through a nearby catch basin and released through a downstream outfall pipe into the Connecticut River. This manhole is designed to surcharge and pressurize during significant rain events, however the bolts holding the cover in place failed during this event causing the SSO. The cover was subsequently welded in place as a temporary measure until the frame and cover could be replaced as part of the ongoing Main Intercepting Sewer Improvements Project. The remaining extreme weather related CSO's were capacity related issues that resulted in backups into customers basements.

Roots, Grease and Debris. There were eight releases caused by root, grease or debris related blockages or flow restrictions. SWSC crews responded by jetting the mainline or cutting the roots to free the blockage. At times, when the property affected has basement level plumbing fixtures and finished basements/apartments, the SWSC strongly recommends the use of backflow preventers to help prevent future basement damage from backups.

Pump Station Failures. On May 25, 2016 a power failure at the Tiffany Street pump station caused surcharge resulting in an overflow over a 12 minute duration into the nearby Pecousic Brook. The SWSC's pump station SCADA system was able to immediately identify the failure and its root cause, 4 blown fuses, which were repaired to minimize the impact of the failure. Following the incident the operator of the SWSC pump stations, Suez Water Environmental Services, replaced the fuses with intrinsically safe, phase sensitive, overload relays.

4.3.2 Sewer Releases to Surface Water in CY 2016

Sewer releases to surface water occurred on four occasions/locations

St. Michael's Cemetery. (release to Watershops Pond): A sewer release was discovered on February 26, 2016 which was due to a collapse in a clay tile sewer. When the SWSC became aware of the release, emergency crews immediately responded and repaired the pipe, thereby addressing the cause of the release.

Tiffany Street Pump Station. (release to Pecousic Brook): On May 25, 2016 there was a sewer release to the Pecousic Brook from the Tiffany Street Pump Station. The SWSC's pump station SCADA system identified the station failure, allowing the root cause of the failure, 4 blown fuses, to be quickly repaired to minimize the impact of the situation.

Union Street Between East Columbus Ave and Main Street. (release to Connecticut River): A sewer release was discovered on June 9, 2016. When the SWSC became aware of the

release, emergency crews immediately responded and cleared the debris causing the blockage thereby addressing the cause of the release.

Mill Street. (release to Connecticut River): An overflow exited a sanitary sewer manhole on Mill Street on August 2, 2016 during a storm event and entered the stormwater drainage system through a nearby catch basin and released through a downstream outfall pipe into the Connecticut River. When the SWSC became aware of the release, emergency crews immediately responded and secured the manhole cover to limit the release.

4.3.3 Conclusions and Follow-Up Actions for Sewer Release Reduction

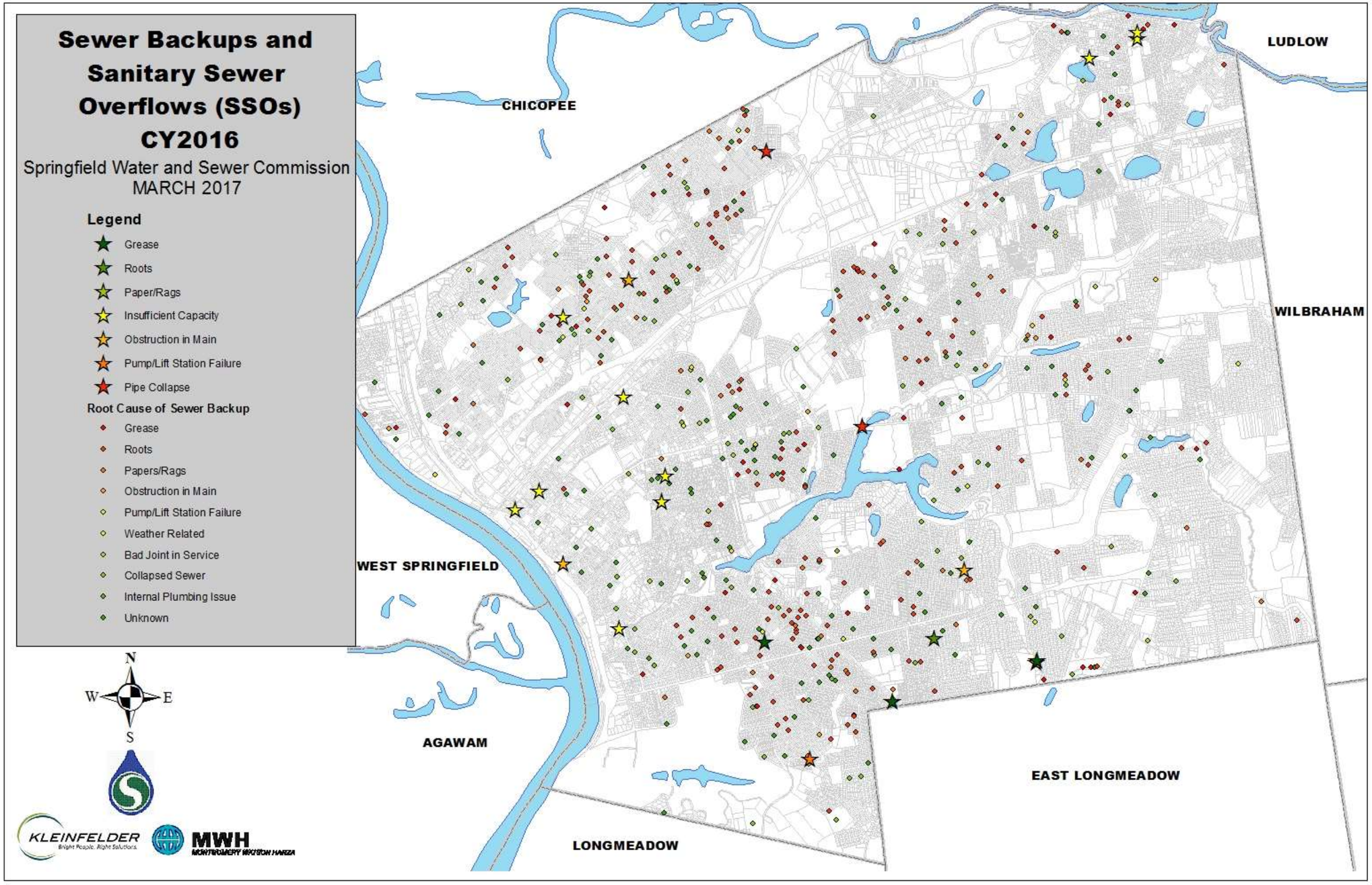
The SWSC's continues to work toward the full implementation of its CMOM program. Shifting towards risk-reduction operations and maintenance of the collection system continues to result in a positive trend toward planned, proactive maintenance and fewer releases. The SWSC continues to develop and improve the VUEWorks CMMS to facilitate work prioritization and asset management in the gravity collection system. Although the SWSC's CMOM program effectively incorporates the essential elements and best management practices for proper operations and maintenance of the collection system, analysis of sewer releases in CY 2016 has highlighted some opportunities of continued improvements.

Service laterals are a week spot in any collection system. As a source of release from collapses, root or grease induced blockages, as well as a significant source of I/I, the SWSC must evaluate whether it assumes a role in the regular maintenance of service laterals or maintains its role in rehabilitating sewer services as it performs its own rehabilitation of mainlines.

Root, sediment, and grease induced blockages continues to be a source of sewer releases. The SWSC will continue to identify historically problematic areas and will proactively address the grit, root, or grease issue. These areas are also included on the SWSC's list of routine and continued inspection and diagnostics so the potential for blockage can be identified before a release occurs.

The SWSC anticipates the number of releases attributable to structural defects will remain low or non-existent as capital projects under design and construction are completed. These projects to replace, renew, rehabilitate and repair collection system assets that pose the highest risk and consequence of failure will position the SWSC to be better able to provide proactive rather than reactive maintenance.

Overall, through the continued implementation of its LTCP for the control of CSOs and holistic IWP, the SWSC will address all wastewater condition and capacity needs in a system-wide approach, prioritizing investment and business risk reduction through progressive maintenance and prioritized capital projects which are of maximum benefit to the SWSC and its constituents.


Sewer Backups and Sanitary Sewer Overflows (SSOs) CY2016
Springfield Water and Sewer Commission
MARCH 2017
Legend
Grease
Roots
Paper/Rags
Insufficient Capacity
Obstruction in Main
Pump/Lift Station Failure
Pipe Collapse
Root Cause of Sewer Backup
Grease
Roots
Papers/Rags
Obstruction in Main
Pump/Lift Station Failure
Weather Related
Bad Joint in Service
Collapsed Sewer
Internal Plumbing Issue
Unknown
N
W
E
S
KLEINFELDER
Bright People. Right Solutions.
MWH
MONTGOMERY WATSON HARZA
CHICOPEE
LUDLOW
WILBRAHAM
WEST SPRINGFIELD
AGAWAM
LONGMEADOW
EAST LONGMEADOW

Section 5 Maximize Storage in the Collection System

The purpose of this control is to ensure that combined sewerage is kept in the sewer system for as long as possible using available in-system storage without adding new storage facilities. The available storage in the collection system is used for minimizing CSO discharges and secondary bypasses at the SRWTF. Part of the SWSC's focus has been on keeping combined and sanitary sewers clean and free of capacity restrictions as well as removing clean stormwater and groundwater from the collection system through I/I reduction components of capital projects.

5.1 Collection System

5.1.1 Trunkline and Interceptor Storage

One of the SWSC's strategies for controlling CSO is through the use of elevated weirs and passive mechanical hydraulic flow devices such as bending weirs, vortex throttles and hydroslides. This allows the capacity of the larger trunklines and interceptors to be utilized as much as possible. Though this helps reduce overflows to receiving water bodies, it can also result in an increased risk of basement back-ups and street flooding when even these large trunklines and interceptors are overloaded during large storms. These events could cause SSOs.

The SWSC's contract operator, Suez, routinely maintains pump station wet wells to such levels as storage in the trunklines and interceptors is maximized without causing unwanted reductions in the level of service.

Through the SWSC's on-going Pipeline Cleaning and CCTV Assessment Program, additional capacity is developed as grit, root blockages, and grease restrictions are removed from the system. Also, every year, the SWSC's contract operator, Suez does a deep clean of the pump station wet wells to help ensure capacity is maximized not only in the wet well but also as a result, in the collection system.

Targeted flow metering is performed in the Connecticut River Interceptor sewershed to support on-going CSO projects. This information is valuable in assessing the balance between CSO control objectives and level of service reduction risk mitigation.

As more CSO projects are completed by the SWSC, the frequency of CSO discharges continues to decrease but the impact of a reduced level of service on SSO frequency continues to be a concern to the SWSC. As new projects are developed, both CSO control projects and pipeline renewal, rehabilitation and replacement projects, the SWSC and its engineering consultants continuously balance CSO control goals with level of service protection. By understanding the effect of proposed flow controls in the CSO system on level of service the SWSC is able to provide the best project for CSO control with the least risk for future SSO problems associated with a reduced level of service. Ongoing and projects completed in the past include:

- 2000-2004 System Optimization Measures Project
- Mill River CSO Relief Project (2003-2006): Key elements included the installation of one bending weir and five vortex throttles to maximize storage in the collection system.
- Chicopee River CSO Control Project (2007-2010): Key elements included the installation of a parallel relief sewer for the Ludlow Interceptor
- Phase I Connecticut River CSO Control Project (2009-2012)
- Washburn CSO Control Project Phase II (2012-2015): Key elements included the relocation of an existing regulator structure to better facilitate CSO controls, modifications to the heights of existing static weirs, and the installation of one bending weir and three hydroslides to maximize in-system storage, particularly in the SWSC's existing Garden Brook Sewer (GBS) which was being greatly underutilized before the project was completed
- Main Interceptor and CSO Improvements (2014 – Present): Key elements include the improvements to CSO outfalls 012, 013, 018 to re-establish the operational capacity of each outfall

In addition to the ongoing and completed projects above, Collection System Optimization Improvements were identified under Phase 2 of the SWSC's Integrated Wastewater Plan (IWP). The improvements include several new passive hydraulic control structures to help optimize collection system storage, as well as adjustments to existing CSO regulators on the Connecticut River Interceptor (CRI) system. The CSO control elements designated in Phase 2 of the IWP serve to decrease CSO activity and overflow volume while simultaneously preserving level of service protection throughout the system. The identified collection system optimization improvements were subjected to a re-assessment against short duration high intensity rainfall conditions.

The construction of the proposed Collection System Optimization Improvements will be implemented as follows:

- Commence bidding services – July 2017
- Issue construction Notice to Proceed (NTP) – September 2017

- Construction of the Collection System Optimization Improvements – October 2017 to June 2018.

5.1.2 CSO System Storage and Pumping Capacity Increases

In addition to the measures described above the SWSC has made some advancements to its CSO storage elements. The 2007-2010 Chicopee River CSO Control Project created 100,000 gallons of CSO storage at the Indian Orchard Pump Station that captures potential CSOs at the site for storms larger than the 5-year return period and eliminated 700,000 gallons of surface flooding for a typical year at the pump station.

Construction of the next phase of the Connecticut River CSO Control Program, the Connecticut River Crossing and York Street Pump Station Improvements Project will commence following completion of the Collection System Optimization Improvements discussed in section 5.1.1. This project will provide additional pumping capacity to the SRWTF which reduces CSO spill frequency and discharge volume while preserving sewer level of service. The project will also provide redundancy of critical infrastructure under the river and operational flexibility to isolate key infrastructure to enable future maintenance and rehabilitation. The design of the river crossing and new York Street Pump Station is currently underway. Phasing of the proposed river crossing work will be implemented ahead of the pump station work.

Connecticut River Crossing

To accommodate additional conveyance capacity from the York Street area, serving the CRI, to the Influent Structure at the SRWTF, a new pipeline crossing of the Connecticut River will be constructed. The project scope consists of two 36-inch force mains and one 72-inch siphon. Also included, as part of the new crossing is the requirement to accommodate additional connectivity from the proposed river crossing to the SRWTF Influent Structure.

The construction of the proposed Connecticut River Crossing including SRWTF Influent Structure Improvements will be implemented as follows:

- Complete final design – July 2017 to October 2018
- Complete bidding services – January 2019 to April 2019
- Issue NTP of proposed Connecticut River Crossing and SRWTF Influent Structure Improvements – May 2019
- Construction of proposed Connecticut River Crossing including SRWTF Influent Structure Improvements – May 2019 to December 2021

York Street Pump Station Improvements

Presently the York Street area, which serves the CRI portion of the collection system, is served by the existing York Street Pump Station, which operates at a capacity of approximately 34 MGD when using the flood control pumps to augment output. At the planning level in the IWP, the requisite future capacity is estimated to be 62 MGD.

As part of the Project, the sewage pumping function will be decommissioned from the existing station and instead be served by the proposed 62 MGD pump station to be constructed on the adjacent land. The existing YSPS will retain its current flood control functions and continue to serve as a flood pumping station in the future. No significant changes are anticipated in the existing YSPS station.

The proposed YSPS work includes the following features:

- Intake Screening Structure
- Pumping Station Building
- Electrical and motor control center (MCC) building
- Standby Generator
- Odor control system

Work on the proposed YSPS will be phased to commence approximately six to nine months following the River Crossing work to allow time for the Amtrak and flood wall construction to be completed prior to commencing the proposed YSPS work. Further consideration will be given to the coordination of these two works items as the respected designs are developed.

- Complete final design – July 2017 to October 2018
- Complete bidding services – October 2019 to January 2020
- Issue NTP of proposed York Street Pump Station Improvements – February 2020*
  * Considers a nine month lag in construction start up from the proposed Connecticut River Crossing and SRWTF Influent Structure Improvements construction; lag in construction allows accommodation of site restrictions and construction phasing impacts within the common project construction areas.
- Construction of proposed York Street Pump Station Improvements – February 2020 to December 2021.

5.2 Stormwater Management Accomplishments

5.2.1 Downspout Disconnections

Though not typically a significant component of the SWSC's capital projects, the 2009-2012 Phase I Connecticut River CSO Control Project included a component of downspout disconnections that helped to reduce private property inflow into the collection system. 98 downspouts at 34 separate properties were disconnected from the collection system to support in the reduction of private property inflow.

5.2.2 Private Development and Redevelopment

The SWSC has standards for a stormwater infiltration and discharge hierarchy in areas where the stormwater runoff needs are serviced by only the combined sewer system. Permit applicants must first consider feasibility of onsite infiltration or off site discharge to storm-only systems prior to offsite discharge to the combined sewer system.

Section 6 Review and Modification to Pretreatment Requirements

To control the source of pollutants from industrial dischargers, the SWSC administers and Industrial Pretreatment Program (IPP) as outlined in the 1997 NMC Report. This program sets regulations for sewer use and pretreatment permits, and conducts inspections of IPP permitted institutions, and issues a separate IPP Annual Report.

The IPP conducts audits, compliance monitoring inspections, and demand monitoring inspections. The purpose of the audit and inspections is to collect and confirm information concerning an industrial user and its regulated processes and to evaluate the industry's compliance with applicable pretreatment standards and regulations. The IPP is primarily concerned with identifying the wastewater pollutant pathways through the industrial user, evaluating the effectiveness of the pretreatment and/or monitoring systems and verifying that residue associated with the removal of wastewater pollutants is disposed of properly.

The EPA granted approval of local limits in an April 26, 2001 letter. The SWSC approved these local limits on June 13, 2001 and they were subsequently incorporated into the SWSC's Rules and Regulations.

The IPP actively and aggressively enforced the pretreatment regulations in 2016. The program inspected all 52 SIUs at least twice during the program year. Of the 281 inspections conducted by the IPP, 95% were conducted at the 52 SIUs. 12% of the 52 SIUs received a Notice of Violation or greater in 2016.

The SWSC is committed to continue its present level of support to the IPP through adequate funding and continued training of IPP staff. All Program Inspectors have also been certified and trained in cross connection control and water distribution operation. At a minimum the Program Inspectors are also required to pass a Grade 2 Wastewater Operators exam.

Section 7 Maximize Flow to the POTW

Maximizing flow to the SRWTF, as well as maximizing the use of storage, are both part of the overall integrated system operations strategy. The method by which these elements of the NMCs are implemented must be viewed in the context of the overall CSO system operating strategy that achieves multiple prioritized objectives.

7.1 CSO Operating Objectives

The SWSC operates the SRWTF based on certain objectives based on risk to human health and the environment. Objectives for the collection system, CSO control, and wastewater treatment can often conflict. Operations staff have clear direction to determine what is most important when conflicts do arise.

The prioritized objectives protect the treatment process as the top priority, followed by protecting the public from sewer exposure and then protecting the environment from CSOs. Protection of the treatment process is the first priority because the highest risk across the integrated system is the risk of damaging the treatment process. The CSO operating objectives are as follows:

1. Protect and maintain biological system and meet effluent discharge limits
    a. Maintain and/or limit flow through secondary treatment in wet weather
    b. Meet secondary effluent limits
2. Capture and convey all dry weather flow
    a. Treat all dry weather flow through primary and secondary system
3. Prevent releases to streets and basements (SSOs)
4. Capture and convey maximum volume of wet weather flow to treatment
    a. Optimize capacity and conveyance and storage systems
    b. Treat all CSO via primary treatment at a minimum
5. Treat as much CSO through secondary as possible
6. Minimize sedimentation / settling in inlet channels, dry wells, and the collection system (particularly the interceptors)
    a. Keep flows to the plant at a high rate to prevent sedimentation
7. Minimize odor problems via proper operations
    a. Direct dry weather sewerage away from neighborhoods and odor generating facilities

   b. Activate odor control facilities when pumping through neighborhoods
8. Minimize energy usage and pump costs
   a. Keep flows moving through the collection system at the highest elevation possible
   b. Pump at rates and times that reduce electric cost

7.1.1 Integrating Permit and Regulations via CSO Operating Strategy

The CSO operating strategy is the SWSC's most reliable method to achieve the SWSC's NPDES permit requirements, the Nine Minimum Controls, and operational elements of the CMOM Program. These regulatory requirements are addressed as follows:

SRWTF NPDES Permit Requirements.

1. Protect and maintain treatment systems performance – *Meet Permit Effluent Limits*
2. Capture and convey all dry weather flow to secondary treatment – *Meet Permit Technology Requirements*
3. Prevent sewage releases to streets or basements – *Prevent SSOs*

EPA CSO Policy and Nine Minimum Controls.

1. Capture and convey maximum wet weather flows (CSO) to treatment – *NMC#4*
2. Protect sensitive areas from overflows – *EPA CSO Policy*
3. Provide high quality treatment of wet weather flows – *EPA CSO Policy*

CMOM Requirements and Asset Management.

1. Minimize sedimentation / maintenance in assets – *CMOM*
2. Minimize odor problems – *CMOM*
3. Minimize energy usage and chemical costs – *Asset Management*

These objectives are implemented through decision making hierarchy that SRWTF Operators follow:

1. "What Flow Rate can the SRWTF Treat?"
   a. Determine the maximum flow the facility can accept without causing problems to the primary and secondary systems
2. "What flow rate can the downstream system convey?"
   a. Determine the maximum flow rate the CRI and MIS can receive without activating a CSO and worse, overflowing to streets or basements

7.2 High Flow Management Plan

The SWSC's contract plant operator, Suez, follows procedures outlined in the SWSC's High Flow Management Plan to maximize flows to the SRWTF during wet weather events. The facility has taken flows of 185 MGD and greater into the SRWTF and 134 MGD into the secondary treatment process. Strategies utilized include routine flushing of the 66-in diameter inlet channels during dry weather to control accumulation of sediments which can restrict hydraulic capacity. Procedures developed in 2006 for improved high flow management continue to be used in 2016. These procedures included strategies such as State Point Analysis to optimize operations of the secondary clarifiers, automatic blanket monitoring instruments and implementation of step feed process control to allow for the parking of solids in the aeration basins during high flow events to reduce solids loss during periods of peak hydraulic loading in the secondary clarifiers. In 2015 the facility lowered the operating Sludge Retention Time (SRT) from approximately 30 days to 19 days. This process change increased the hydraulic loading capacity of the secondary system. This change then resulted in reducing secondary bypasses from 19 in 2015 to 1 in 2016.

High flow events that result in influent bypass are verbally reported within 24 hours and a written report is filed within 5 days pursuant to NPDES requirements.

7.3 Recent System Upgrades

Recent system upgrades that contribute to maximizing flows to the SRWTF include:

Remotely Operated Gate Actuators. Remotely operated gate actuators were installed on inlet gates for both the primary and secondary processes in 2008. Remote operation of these gates allows operators to maximize flows the SRWTF.

Ludlow Interceptor and Indian Orchard Pump Station Improvements. Parallel relief for the Ludlow Interceptor and pumping system upgrades at the Indian Orchard Pump Station were completed in May 2009 increasing the capacity from 34 MGD to 52.5 MGD. This increase in pumping capacity affects the total volume of wastewater conveyed to the SRWTF without impacting downstream CSOs.

Electric Pumps at the York Street Pump Station. One electric pump at the York Street Pump Station (YSPS) was completely reconditioned in 2008, increasing the capacity for this pump station. Measured improvement showed a 25% increase in pumping capacity for that pump when compared to output prior to the reconditioning. A second YSPS pump was completely reconditioned in 2011.

York Street Pump Station Automated Bar Racks. Automated bar racks were installed in the YSPS in December 2009. The upgrade removes more materials from the wastewater stream that could become obstructions to flow. A similar project was completed at the SRWTF bar screens to optimize flow at the headworks entering the SRWTF.

Washburn Street Pump Station Inlet Increase. The transition to the Washburn Street Pump Station was modified with a larger inlet that connected to a new 30-inch diameter influent pipe to the pump station. This influent was upsized from the previous 18-inch diameter pipe. The larger pipe has reduced problematic blockages and maintenance issues from the regulator structure to the wet well. The sanitary pumps were also all replaced in 2012.

CSO 007 and CSO 049 Flow Control Devices and Sewer Separation. New CSO regulator structures with flow control devices and 15,000 linear feet of new sanitary sewers, separating combined flows, in the CSO 007 and CSO 049 Sewershed have contributed to minimizing CSOs and maximizing flows to the SRWTF.

CSO 008 In-system Storage Improvements. In-system storage has been built and is on line in the CSO 008 Sewershed. This project included additional flow control devices to maximize in-system storage and flow to the SRWTF.

Section 8 Elimination of Dry Weather Overflows; Control of Solids and Floatables; and Pollution Prevention Programs

8.1 Elimination of Dry Weather Overflows

In accordance with Part I.A.2.c of the NPDES Permit, the SWSC reports any dry weather CSO discharges within 24 hours and provides written follow up identifying locations, durations, estimated volumes and the results of investigations. Recent efforts to eliminate dry weather overflows include:

Regulator Inspections. Twice weekly inspections of the CSO regulators as required by the NPDES Permit and outlined in the 1997 NMC Report.

Remote CSO Monitoring. Using level sensors and telemetry to communicate with a central SCADA system at the SRWTF to reduce impacts from CSOs by decreasing response times by maintenance staff.

Mill River Relief Project. Completion of the Mill River Relief Project that increased in-system capacity upstream of the seven CSO that discharge to the Mill River. Installation of vortex valve throttling devices and a bending weir maximize in-system storage and protect against dry weather overflows.

Washburn Street CSO 008 Project. Completion of the Washburn Street CSO 008 Project replaced the existing regulator and helped facilitate the maintenance of dry weather flow to the existing sanitary sewer pumping station has assisted in eliminating dry weather overflows.

Indian Orchard Pump Station and Chicopee River CSO Improvements Project. Completion of this Project in May 2009 eliminated CSO Regulators 043 and 044, increased pumping capacity to the SRWTF by approximately 18.5 MGD and created approximately

100,000 gallons of emergency storage at the pump station for extreme wet weather events or during a potential pump station shutdown.

Phase I Connecticut River CSO Control Project. Completion of the construction of sewer and drain improvements upstream of CSO Regulators 007 and 049. These improvements will reduce CSO discharges at both regulators through targeted CSO separation, increased drain and sewer conveyance, and optimization of in-system storage

Heavy Grit Removal from the CRI. Heavy Grit Removal through a cleaning program of the CRI was completed in 2006, 2009, and in 2010.

Pipeline Cleaning and CCTV Assessment. Since 2009, over 80% of the SWSC's collection system pipeline assets have been cleaned of grit, roots, and grease.

Based on data available from remote monitoring systems and inspection of the CSO overflows, in CY 2016, there were no dry weather overflows.

8.2 Control of Solids and Floatables

The SWSC has completed a system-wide program for the installation of floatable control baffles. Additional cleaning that has been mentioned in other sections of this Report has also eliminated solids from the collection system.

8.3 Pollution Prevention Programs

City of Springfield and SWSC ordinances pertaining to pollution prevention programs remain as detailed in the 1997 NMC Report.

The City of Springfield conducts various programs which contribute to minimization of materials entering the CSOs including the following:

- Erosion control measures
- Street cleaning
- Catch basin cleaning
- Household hazardous waste programs
- Recycling programs

Section 9 Update of the Public Notification Program

The goals of the CSO notification program are to:

- Make the public aware that the SWSC has a combined sewer system that can overflow
- Explain what a CSO is and how it impacts water quality and can threaten public health
- Inform the public when a CSO has occurred and warn against contact with the receiving waters
- Raise public awareness of the benefits to the community of the SWSC's investment in CSO control.

Signage. In accordance with the NPDES Permit, the SWSC maintains identification signs at CSO locations identifying each location as "*Springfield Water and Sewer Commission Wet Weather Sewage Discharge Outfall (No.)*". Replacement signs were designed in 2012 and installed in 2014. Pursuant to the SWSC's NPDES Permit, the SWSC annually reviews and places additional signage when beneficial for public notification.

Website. The SWSC's website at http://www.waterandsewer.org/ includes a section titled "*What are Combined Sewer Overflows (CSOs)?*" This page defines CSOs, identifies CSO locations and corresponding impacted waters, and describes activities that have been completed as well as proposed activities to reduce or eliminate CSOs. The website also provides updates to locations of projects and maintenance activities.

Citizen Council Meetings. The SWSC routinely attends various monthly citizen council meetings to ensure the public is informed of the status of CSOs in Springfield and on the Connecticut River and to provide updates on CSO related projects. In addition, the SWSC holds specific project related community meetings as required to solicit input from ratepayers and the public in active project areas.

Annual Report. The SWSC publishes an Annual Report for each fiscal year. The Annual Report contains sections that detail sewer collection systems including CSOs. Maintenance and capital improvements projects on the CSO systems are discussed, and the SWSC's annual budget is detailed to include capital expenditures and maintenance activities.

Scholastic Outreach. The SRWTF conducts a scholastic outreach program by hosting classes at the facility to explain various aspects of water and wastewater collection and treatment including the importance of pollution prevention. *The World is Our Classroom* is a teaching program dedicated to raising achievement levels of the City's 5th grade students to meet the

science and technology goals of the Massachusetts Curriculum Framework and the Comprehensive Assessment System (MCAS) tests. A decision was made to create a "classroom within a company" at the Bondi's Island water treatment facility. This shapes a realistic environment where it is possible to teach about the science of water and technology of the wastewater treatment process. In turn, it inspires student interest and equips teachers to teach in an authentic environment. This goal sharpens the skills of analysis, creative thinking, identification of components and relationships, and interpretation of data. The program blends inquiry, problem solving, real-world learning experiences, project-based learning and group decision making. In 2016, 1,605 students attended the program. Since this program began in 2003, approximately 18,600 students have participated.

Section 10 Monitoring to Effectively Characterize CSO Impacts and the Efficacy of CSO Controls

10.1 Connecticut River Water Quality Sampling and Model

In 2001 and 2002 the SWSC, in conjunction with the City of Holyoke, the City of Chicopee, and the Pioneer Valley Planning Commission developed and performed a Connecticut River Water Quality Sampling Program that gathered water quality sampling data at 12 select locations in receiving waters tributary to the Connecticut River or in the River itself. The program included both dry and wet weather sampling to determine fecal coliform and E. coli bacteria counts in the Connecticut River, Chicopee River, Mill River and the Westfield River. The intent of this program was to generate data that would be used initially to model and analyze baseline conditions in the receiving waters. These baseline conditions would then be used to measure the efficacy of potential control strategies for the SWSC's CSOs.

Water quality modeling was performed after the sampling program and subsequent discussions with the EPA and MADEP. Modeling included 3-month and 1 year baseline condition simulations and subsequent evaluation of the impact of Phase I CSO improvements. The analysis and report were completed in 2005. The SWSC initiated a program to update the model in 2011 as part of the development of the CSO LTCP. That work was completed in 2012 and helped inform the findings and recommended plan presented in the SWSC's CSO LTCP and the IWP. The SWSC maintains the Water Quality Model in order to support sound decision making for future CSO projects.

The SWSC is currently exploring potential regional solutions to meet future nitrogen discharge limits. The potential solutions include a nitrogen trading program within the region and/or integration of regional wastewater treatment facilities. A nitrogen trading program and regionalizing the sewer utilities could allow the available biologic nutrient removal (BNR) capacities of some facilities to supplement the needs of others, subsequently to optimize the

use of ratepayer's funds for the entire region. The early evaluation effort will be partially funded by an Efficiency and Regionalization Grant administered through the Pioneer Valley Planning Commission that aims to design a framework for nitrogen trading and address wastewater and stormwater management issues regionally, rather than each community independently.

10.2 Permanent CSO Monitoring Program

Section 2 of this Report further details the review undertaken and summarizes the findings of the comparison of the CY 2016 annual rainfall and CSO flow meter data review against the 1976 typical year series currently being applied to the hydraulic model for CSO predictive analysis.

Section 2 incorporates the findings from an initial rainfall analysis of the four local rain gauges sited in the Springfield catchment and the recordings from the Bradley Airport Weather Station, during the entire CY 2016. The rainfall focused sections consider a breakdown of the annual rainfall recordings at all five gauges and how when applying some standard categorization they compare to the Springfield 1976 typical year.

Included in Section 2 are comparisons between the readings from the Springfield CSO overflow meters with the predicted results from when the sewer system hydraulic and hydrologic model is simulated using CY 2016 rainfall.

Section 11 System Reinvestment and Risk Reduction

11.1 Expenditures for CSO, Collection System, and Treatment Systems

The SWSC implements a significant portfolio of maintenance projects for both the collection system (pipes and pump stations) and the treatment systems. Even now, at the peak of the CSO program's capital expenditures, when the Connecticut River Crossing and YSPS Project requires most of the upcoming budget, the SWSC still invests in maintenance of non-CSO systems to ensure that public health and the environment are protected and regulatory requirements are met.

The SWSC's *Three Year Capital Improvement Program For Fiscal Years 2016-2018 Including One Year Capital Program Budget For Fiscal Year 2016* and the *Three Year Capital Improvement Program For Fiscal Years 2017-2019 Including One Year Capital Program Budget For Fiscal Year 2017* can both be found in Appendix C.

Generally, FY 2016 expenditures can be broken down as follows:

Table 11-1 Breakdown of FY 2016 Capital Expenditures

Capital Expenditure Category	Amount
Wastewater Treatment Facility	$575,000
Pump Stations	$200,000*
Wastewater Collection Improvements	$6,500,000
CSOs	$2,000,000

*Suez is responsible for funding and executing the maintenance of the pump station infrastructure within the SWSC wastewater collection system until the completion of their 20 year contract with the SWSC in 4 years. The contract stipulates that Suez shall return the infrastructure to the SWSC in equal or better condition than it was at the start of the contract.

Most of the capital money spent in FY 2016 was expended on wastewater collection system improvements. $2,000,000 was spent on CSO Reduction with the development of the Preliminary Design Report for the Connecticut River Crossing and York Street Pump Station Improvements. More money will be spent on CSO Reduction as this project moves into future design and construction phases.

The SWSC's *Wastewater Operating Budget for the Year Ending 6/30/2017* can be found in Appendix D.

Generally, expenditures can be broken down as follows:

Table 11-2 Breakdown of Wastewater Operating Budget for Year Ending 6/30/2017

Operations Expenditure Category	Amount
FOG and WW Administration	$164,690
IOPS	$1,371,285
Flood Control	$89,451
Other Pump Stations	$659,479
Operations Management WW	$186,500
Sewer Collection Services	$13,877,668
Treatment Plant Administration	$15,159,263
IPP Administration	$273,534

11.2 Risk Reduction Through Capital Improvement Projects

The SWSC uses an asset management framework to prioritize investments in projects that reduce the risk of failing to deliver wastewater collection and conveyance services. In the collection system, there are two dominant modes of failure: operations failure and structural failure. Both types of failures can result in sewage releases to basements, streets, or to surface waters. In addition, the structural failure mode can cause sinkholes, thereby increasing the potential consequences to human health and safety.

The SWSC's risk-based decision process focuses on cost-effective risk reduction projects. It is not sufficient to merely invest in improving high-risk assets; rather, it is necessary to invest in projects that actually reduce the risk of exposure of those assets to the degree that the risk reduction is greater than the project costs.

Most of the operational risk reduction is performed through proactive root identification and treatment projects; proactive FOG identification, enforcement, and aggressive cleaning; and

grit removal through the SWSC's yearly Pipeline Cleaning and CCTV Assessment Program. The operational failure risk reduction program elements help eliminate risk associated with reduced capacity.

For the past several years, the SWSC has executed, through its design consultants and contractors, yearly, non-CSO related capital projects to address structural defects found during the SWSC's yearly Pipeline Cleaning and CCTV Assessment Project. In addition to these larger-scale Projects, the SWSC's own crews routinely and proactively address pipelines in need of more isolated repair and also respond to emergency pipe repair needs.

Figure 11-1 CIPP Installation on Alden Street for CIP Project

11.3 Pipeline Infrastructure Improvements Recommendations Methodology

The following is a summary of the procedure the SWSC's engineer consultant follows to create the Prioritized Infrastructure Improvements Recommendations (PIIR) list that is provided in appendix A. The purpose of the program is to provide recommendations for prioritization of

areas with high probabilities of failure, regardless of the level of consequence associated with that failure that can be undertaken under the current FY budget.

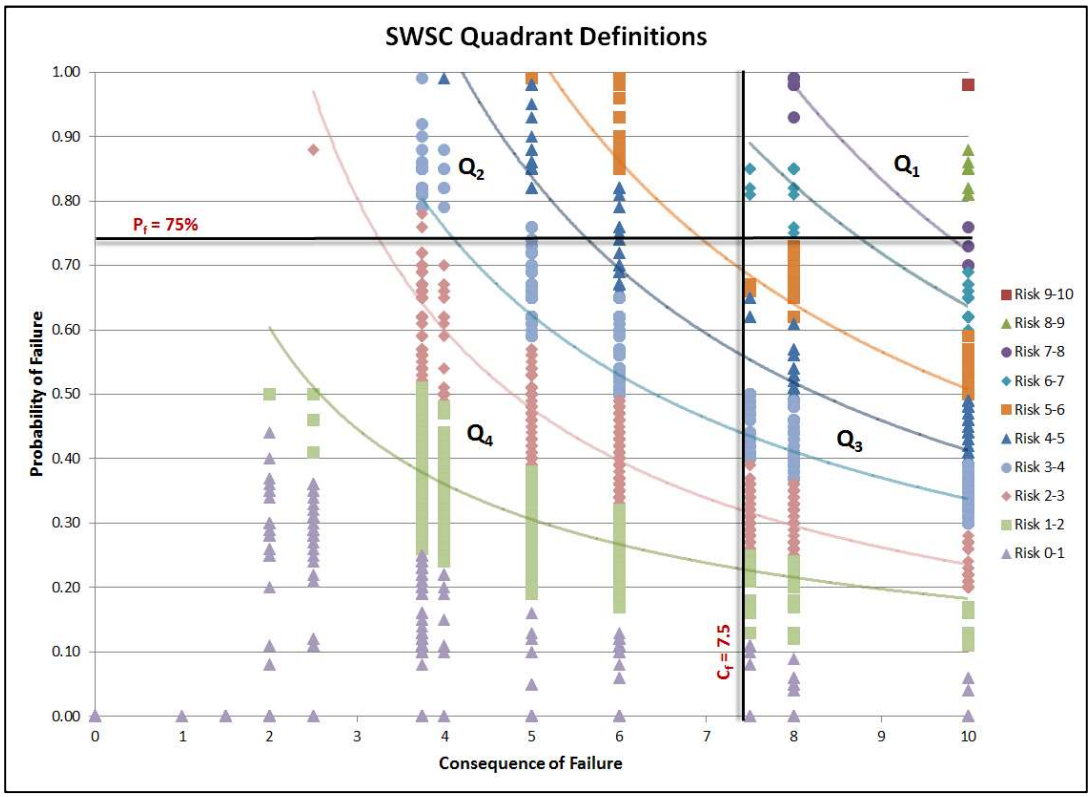
Prioritization Methodology

Risk Quadrants – An assets risk is defined as the product of its probability of failure and the consequences of such failure.

$$R = P_f \times C_f$$

Each asset within the SWSC system has its own individual Risk Factor (RF) that falls within the range of 0 - 10. By plotting the Probability of Failure (Pf) versus the Consequence of Failure (Cf) that define each assets risk score, it becomes evident that there may be qualitative differences between two assets that have the same risk score.

Figure 11-2 SWSC Quadrant Definitions



As can be seen in Figure 11-2, an assets risk score can be grouped into quadrants on the Pf vs. Cf graph:

- Quadrant 1 – The Risky Quadrant – Assets with both a high probability of failure as well as a high consequence of failure. This quadrant contains the most critical assets in the worst condition.

- Quadrant 2 – The Failing Assets Quadrant – Assets with a high probability of failure, but a lower consequence of failure. These assets are typically less critical to day-to-day operations, but are either in major disrepair or are already failing to meet their design intent.
- Quadrant 3 – The Monitoring Quadrant – Assets with higher consequences of failure, but lower probabilities of failure. It is typical to conduct further monitoring and assessment of assets in this quadrant to prevent them from moving up into the "Risky" quadrant.
- Quadrant 4 – The Base Quadrant – Assets with low probability of failure and low consequence of failure. These assets are less critical to the overall system performance, and as such can be put on a more longer-term assessment program to monitor their movement toward the "Failing Assets" quadrant.

In an effort to focus our recommendations for improvements, all pipe assets within the SWSC system have been categorized using these quadrant definitions. Once categorized, pipes that fell within either the Risky Quadrant or the Failing Asset quadrant were further analyzed and grouped into the following categories:

1. Candidates for consideration for FY 2016 Infrastructure Improvements. This group includes the following sub-groups:
    a. Pipes that can be grouped with other similar pipes into a defined project
    b. Pipes that may require a form of point repair, including potential candidates for short sectional liners or small dig and replace segments.
    c. Pipes that require maintenance to repair either severe root issues or intruding taps that caused abandonment of CCTV operations. The passage of the CCTV camera was selected as the basis for the selection to this list since defects that prevent the passage of the camera could cause a capacity issue that may lead to an SSO.
2. Candidates for consideration for larger, more complex improvements.
3. Candidates for further ongoing diagnostics and assessment.
4. Assets that will no longer be considered for FY 2016 improvements.

Initial Project Development – Using the SWSC Geographical Information Systems (GIS) data as well as the geometric network, projects were defined based on geographical, attribute and systematic similarities. In general, the initial project definitions consisted of a grouping of 1,000 to 2,000 linear feet of pipeline that have similar attribute (pipe size, material, age), systematic (local collector, trunk, overflow) and geographical characteristics. In addition, where available, projects were also grouped to consider pipeline assets of similar conditions based on the data obtained during the ongoing system assessment program that SWSC consultants are managing on behalf of the SWSC.

Project Analysis/Prioritization –
In an effort to prioritize the list of projects, a weighted average project risk factor (PRF) and a weighted average project criticality factor (PCF) were created based on asset length and calculated to summarize the risk and criticality associated with each project as follows:

$$\mathrm{PRF_p} = \frac{\Sigma\{(RiskFactor_1 * \mathrm{Length_1}), \ldots (\mathrm{RF_n} * \mathrm{L_n})\}}{\Sigma(\mathrm{L_1}, \ldots \mathrm{L_n})}$$

$$\mathrm{PCF_p} = \frac{\Sigma\{(CriticalityFactor_1 * \mathrm{Length_1}), \ldots (\mathrm{CF_n} * \mathrm{L_n})\}}{\Sigma(\mathrm{L_1}, \ldots \mathrm{L_n})}$$

The projects were primary sorted from highest to lowest PRF and then secondary sorted from highest to lowest PCF.

A project analysis was then conducted to determine the final ranking each project would receive on the final PIIR list. This analysis was used to calibrate the recommendations by determining a prioritization score, which allowed for a better understanding of why each project had risen to the top of the list. The analysis took into consideration the weighted categories of PRF, PCF, the predominant defect type, potential customer impact of failure, maximum project depth, traffic impacts and utility conflicts. Table 11-1 below demonstrates the criteria that was used to determine a rank from 1 to 5 for each of the 7 categories. A prioritization score was then developed for each project by multiplying the criteria factor for each category by its associated weight and summing all of the resulting values. The project list was primary sorted by largest to smallest prioritization score, secondary sorted by largest to smallest PRF and tertiary sorted by largest to smallest PCF to develop the final rankings.

In order to determine which projects were on roadways that were eligible to be excavated under the moratorium regulations of the City of Springfield, historical roadway resurfacing databases were analyzed and incorporated into the project list. This was reflected in the project list by including the year the roadways in each project were last paved, the number of years since it was paved, and the year it is eligible for excavation. A list of scheduled CY 2017 roadway resurfacing projects in Springfield was also examined to identify overlapping PIIR projects to be completed before the resurfacing project got underway.

The final steps to finalize the project list was verification of the recommendations for each of the projects and then utilizing them to create preliminary project cost estimates. The videos and reports from the inspections of the pipes associated with each project were reviewed and final recommendations were developed. These recommendations were then translated into preliminary cost estimates utilizing pricing from the completed projects associated with the FY13, FY14, FY15 PIIR.

The table in appendix A is the cumulative list of recommended projects for the FY2016 PIIR. Projects in rows that are colored grey and have text with red strikethroughs have been completed in previous fiscal years. Projects in rows that are colored blue are the FY2016 projects that are new to the cumulative list. The projects in rows that are colored grey, white and green are the existing projects added in FY2013, FY2014, FY2015 respectively. The order the active projects on the list are ranked, represent the initial recommendations of how they should be prioritized. However, moratorium restrictions, completion of a PIIR project before the start of a road

resurfacing project, utilizing the resources within the SWSC opposed to a subcontractor and other factors can potentially change the order in which they are addressed

Table 11-1 Prioritization Criteria Rankings for Prioritization Score

Prioritization Criteria Rankings						
Criteria	**Category Weight**	**5**	**4**	**3**	**2**	**1**
Project Risk Factor (PRF)	4	PRF ≥ 8	8 > PRF ≥ 6	6 > PRF ≥ 4	4 > PRF ≥ 2	PRF < 2
Project Criticality Factor (PCF)	4	PQF ≥ 8	8 > PQF ≥ 6	6 > PQF ≥ 4	4 > PQF ≥ 2	PQF < 2
Predominant Defect Type	3	Collapse or Missing Wall/Hole causing Abandoned Survey	Hinge Fractures/Holes /Missing Wall Defects	Surface Aggregate Missing/Visible or Significant Infiltration	Longitudinal or Circumferential Fractures	Longitudinal or Circumferential Cracks
Potential Customer Impact of Failure	3	100+	75 - 99	74 - 50	49 - 25	0 - 25, N/A
Maximum Project Depth	1	> 15 feet	10 - 15 feet	6 -10 feet	< 6 feet	
Traffic Impact	1	High		Medium		Low
Utility Conflict	1	Other Utility in same street is > 24"	Other Utility in same street is 18"- 24"	Other Utility in same street is 15"- 18"	Other Utility in same street is 12"- 15"	Other Utility in same street is < 12"

Appendix A – 2016 PIIR

SWSC FY2013 - FY2016
ALL RECOMMENDED NON-CSO PROJECTS

											Weighting Factor													
											4	4	3	3	1	1	1							
Prioritized Project Rank	Project/Phase	FY Project Recommended	Status	Overview Sheet Number	Pipe Size (in)	Pipe Material	Project Risk Factor	Project Criticality Factor	# of Customers Potentially Affected by Failure	Maximum Project Depth	"Project" Length (LF)	Project Risk Value	Project Criticality Value	Potential Customer Impact	Predominant Defect Type	Impacts to Adjacent Utilities	Depth	Traffic Impact	Prioritization Score	Initial Recommended Resolution	Notes	Preliminary Project Cost	Cumaltive Project Cost	Street No	Year Paved (0000 = prior to 2002)	# Years Since Previous Paving	Year Eligible for Excavation (assuming 10 year moratorium)
1	~~Mill Street Main Interceptor1~~	~~FY2014~~	~~Ongoing FY2015 Project~~	~~3, 8~~	~~66~~	~~RCP~~	~~7.26~~	~~7.83~~	~~25000~~	~~17.80~~	~~2,936~~	~~5~~	~~5~~	~~5~~	~~5~~	~~3~~	~~5~~	~~1~~	~~79~~	~~Rehab or dig and replace~~	~~Several segments of RCP interceptor showing signs of corrosion. Rebar exposed in some locations~~	~~N/A~~	~~$0~~	~~08675~~	~~0000~~	~~10+~~	~~2016~~
2	Pondview	FY2016	New Project	31	42	RCP	8.65	8.00	6219	6.20	115	5	5	5	4	1	3	1	**72**	Line P374A and Repair US MH	Significant Corrosion Issue in P374A and in US MH. High flows/complex.	$100,000	$100,000	N/A	N/A	N/A	N/A
3	South Branch Easement	FY2016	New Project	26	27	RCP	8.00	6.52	300	19.60	300	5	4	5	4	1	5	1	**70**	Line Both Pipes	Significant corrosion in upstream ends of both pipes. VERY DEEP pipe cover and high flows.	$180,000	$280,000	N/A	N/A	N/A	N/A
4	~~St. Michaels Cemetery~~	~~FY2016~~	~~To Be Completed FY16~~	~~N/A~~	~~36/39~~	~~Clay Tile~~	~~6.41~~	~~5.97~~	~~4718~~	~~14.00~~	~~3,105~~	~~5~~	~~3~~	~~5~~	~~5~~	~~1~~	~~4~~	~~1~~	~~68~~	~~Slipline All Pipes~~	~~Missing surface walls and broken clay tiles throughout pipes. High flows through 36" diameter pipe.~~	~~$1,862,884~~	~~$2,142,884~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~
5	~~Carew Street~~	~~FY2015~~	~~To Be Completed FY16~~	~~6~~	~~12~~	~~VCP~~	~~4.60~~	~~4.60~~	~~759~~	~~19.60~~	~~384~~	~~3~~	~~3~~	~~5~~	~~4~~	~~5~~	~~5~~	~~5~~	~~66~~	~~3 Spot Repairs or Line Entire Pipe~~	~~Multiple Fractures, Broken Pipe, Infiltration~~	~~$115,104~~	~~$2,257,988~~	~~02360~~	~~2008~~	~~9~~	~~2018~~
6	~~Page Blvd_2~~	~~FY2015~~	~~To Be Completed FY16~~	~~4~~	~~20~~	~~VCP~~	~~5.05~~	~~5.05~~	~~437~~	~~14.00~~	~~276~~	~~3~~	~~3~~	~~5~~	~~4~~	~~5~~	~~4~~	~~5~~	~~65~~	~~Line Entire Pipe~~	~~Fractures and Infiltration~~	~~$82,737~~	~~$2,340,725~~	~~09440~~	~~2005~~	~~12~~	~~2015~~
6	~~Parker Street~~	~~FY2015~~	~~To Be Completed FY16~~	~~19, 20~~	~~12~~	~~VCP~~	~~4.49~~	~~4.49~~	~~130~~	~~12.00~~	~~1,052~~	~~3~~	~~3~~	~~5~~	~~5~~	~~2~~	~~4~~	~~5~~	~~65~~	~~Line All Pipes~~	~~Fractures and Cracks Throughout~~	~~$315,659~~	~~$2,656,384~~	~~09510~~	~~0000~~	~~10+~~	~~2016~~
8	~~Saint James Avenue3~~	~~FY2014~~	~~Original Project - FY14~~	~~12~~	~~12~~	~~VCP~~	~~4.80~~	~~4.26~~	~~275~~	~~11.70~~	~~2,805~~	~~3~~	~~3~~	~~5~~	~~5~~	~~1~~	~~4~~	~~5~~	~~64~~	~~Mix of dig and replace sags and CIPP Liners~~	~~VC pipe with various cracks/fractures/breaks/holes/sags and significant flow~~	~~$1,402,500~~	~~$4,058,884~~	~~11170~~	~~2010~~	~~7~~	~~2020~~
9	~~WhiteSt6~~	~~FY2014~~	~~Original Project - FY14~~	~~10~~	~~24~~	~~VCP~~	~~5.45~~	~~5.80~~	~~155~~	~~13.40~~	~~357~~	~~3~~	~~3~~	~~5~~	~~4~~	~~2~~	~~4~~	~~5~~	~~62~~	~~Dig and Replace with a larger pipe to minimize backwater conditions~~	~~Hinge Fractures and Fractures with Heavy Flow~~	~~$249,900~~	~~$4,308,784~~	~~12220~~	~~0000~~	~~10+~~	~~2016~~
10	~~Burghardt Street~~	~~FY2015~~	~~To Be Completed FY16~~	~~16~~	~~15~~	~~VCP~~	~~6.38~~	~~5.28~~	~~344~~	~~13.92~~	~~249~~	~~4~~	~~3~~	~~5~~	~~4~~	~~1~~	~~4~~	~~1~~	~~61~~	~~Relocated Pipes Out of Drainage Basin~~	~~150 FT Sag (100% Water Level), Holes and Broken Pipe~~	~~$700,000~~	~~$5,008,784~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~
11	Grayson Dr 2	FY2016	New Project	17/18	30	RCP/ACP	5.71	6.36	3561	14.60	1,242	3	4	5	3	1	4	3	**60**	Line All Pipes	Infiltration gushers/runners; surface roughness increased	$745,476	$5,754,260	05990	0	10+	2016
11	Sunrise Terrace	FY2016	New Project	19/20	10/12	VCP	4.89	6.26	739	9.20	1,320	3	4	5	4	1	3	1	**60**	2 Spot Repairs and Dig and Replace 230' of Pipe	Holes, sags, fracture multiples and defective repair patches	$377,800	$6,132,060	N/A	N/A	N/A	N/A
11	Breckwood Circle	FY2016	New Project	18	10	VCP	6.43	6.17	50	7.00	580	4	4	3	4	3	3	1	**60**	Mix of Dig and Replace and CIPP Lining	40' long hinge fracture in P3095 and HSV. P30C8 has ex long PVC pipe replacement.	$309,300	$6,441,360	09110	2015	2	2025
11	Wilbraham 2	FY2016	New Project	27	10	ACP	5.10	3.90	220	10.40	360	3	2	5	4	5	4	4	**60**	Dig and Replace or Pipe Burst	Holes, Infiltration, Fractures, Cracks, Sags	$252,000	$6,693,360	12282	2009	8	2019
11	Locust Street1	FY2013	Previously Removed by SWSC in 2013	3	30x45/33x49	BRICK	7.90	5.90	51	6.40	789	4	3	3	5	2	3	3	**60**	Overflow line only - does not require immediate attention	Brick overflow pipe with concrete invert - concrete is corroding - missing wall/holes	$276,183	$6,969,543	07860	2007	10	2017
16	Grayson Dr 1	FY2016	New Project	15/16	24	RCP	4.91	7.02	2230	16.50	1,362	3	4	5	3	1	5	1	**59**	Line All Pipes	Infiltration gushers/runners; surface aggregate visible	$817,431	$7,786,975	05990	0	10+	2016
16	Plumtree/Briarwood1	FY2016	New Project	33	15	VCP	4.30	4.30	762	15.10	377	3	3	4	4	5	5	1	**59**	Mix of Dig and Replace and CIPP Lining	Hinge Fractures, Longitudinal Fractures and Infiltration. Repair Invert of Manhole AB7. Pipes located throughout backyards.	$222,500	$8,009,475	09800	2011	6	2021
16	~~KnoxOutlet1~~	~~FY2014~~	~~Removed by KLF in 2016~~	~~3, 8~~	~~24~~	~~VCP~~	~~6.80~~	~~5.69~~	~~133~~	~~8.00~~	~~459~~	~~4~~	~~3~~	~~5~~	~~3~~	~~3~~	~~3~~	~~1~~	~~59~~	~~Relocate Knox connection to MIS as part of Main Interceptor project.~~	~~Crack hinge, fractures and cracks~~	~~$137,700~~	~~$8,147,175~~	~~07385~~	~~2006~~	~~11~~	~~2016~~
16	~~Carew Street_2~~	~~FY2015~~	~~To Be Completed FY16~~	~~23~~	~~12~~	~~VCP~~	~~4.98~~	~~4.98~~	~~403~~	~~10.40~~	~~674~~	~~3~~	~~3~~	~~5~~	~~2~~	~~5~~	~~4~~	~~5~~	~~59~~	~~Line All Pipes~~	~~Fractures/Cracks Throughout~~	~~$202,109~~	~~$8,349,284~~	~~02360, 04385, 09900~~	~~2008~~	~~9~~	~~2018~~
16	~~Stafford Street~~	~~FY2015~~	~~Completed FY15~~	~~12~~	~~10/12/15~~	~~VCP~~	~~4.42~~	~~4.42~~	~~1204~~	~~8.30~~	~~766~~	~~3~~	~~3~~	~~5~~	~~4~~	~~2~~	~~3~~	~~3~~	~~59~~	~~Replace Sag, Line All Pipes~~	~~10 FT Sag (30% Water Level), Multiple Fractures and Cracks Throughout~~	~~$236,752~~	~~$8,586,035~~	~~11070, 05800~~	~~0000~~	~~10+~~	~~2016~~

Note: This sheet combines all remaining FY2013-15 projects that have not yet been completed with all new FY2016 projects. Reference the legend at the bottom of the table for an explanation of the color coding of projects.

SWSC FY2013 - FY2016
ALL RECOMMENDED NON-CSO PROJECTS

											Weighting Factor														
											4	4	3	3	1	1	1								
Prioritized Project Rank	Project/Phase	FY Project Recommended	Status	Overview Sheet Number	Pipe Size (in)	Pipe Material	Project Risk Factor	Project Criticality Factor	# of Customers Potentially Affected by Failure	Maximum Project Depth	"Project" Length (LF)	Project Risk Value	Project Criticality Value	Potential Customer Impact	Predominant Defect Type	Impacts to Adjacent Utilities	Depth	Traffic Impact	Prioritization Score	Initial Recommended Resolution	Notes	Preliminary Project Cost	Cumaltive Project Cost	Street No	Year Paved (0000 = prior to 2002)	# Years Since Previous Paving	Year Eligible for Excavation (assuming 10 year moratorium)
21	Jamaica St	FY2016	New Project	6	15	ACP	6.21	6.08	264	15.50	365	3	3	5	4	1	5	1	**58**	Dig and Replace or Pipe Burst	3 holes and 45' long sag. Deep cover over pipe.	$156,580	$8,742,615	N/A	N/A	N/A	N/A
21	~~CarewSt1~~	~~FY2014~~	~~Completed - FY15~~	~~5~~	~~12~~	~~VCP~~	~~5.10~~	~~4.05~~	~~166~~	~~8.20~~	~~645~~	~~3~~	~~3~~	~~5~~	~~2~~	~~5~~	~~3~~	~~5~~	~~**58**~~	~~Replace 2 Pipes and Line 1 Pipe~~	~~Holes, Breaks, Sags, Cracks/Fractures~~	~~$365,500~~	~~$9,108,115~~	~~02360~~	~~2015~~	~~3~~	~~2025~~
21	~~Liberty Street_1~~	~~FY2015~~	~~To Be Completed - FY16~~	~~11~~	~~18~~	~~VCP~~	~~4.73~~	~~4.73~~	~~82~~	~~11.10~~	~~187~~	~~3~~	~~3~~	~~4~~	~~4~~	~~1~~	~~4~~	~~5~~	~~**58**~~	~~Line All Pipes~~	~~Fractures, Infiltration, Cracks Throughout~~	~~$56,249~~	~~$9,164,364~~	~~07770~~	~~0000~~	~~10+~~	~~2016~~
21	Page Blvd_4	FY2015	Original Project - FY15	1	10	VCP	5.40	3.90	155	14.18	156	3	2	5	3	5	4	5	**58**	Line Entire Pipe	Surface Aggregate Projecting, Break, Infiltration	$46,925	$9,211,289	09440	2007	10	2017
21	Cottage Street	FY2015/FY2016	Original Project - FY15	4	12/15	ACP	4.49	4.55	37	11.30	1,484	3	3	2	5	5	5	3	**58**	Mix of Dig and Replace and CIPP Lining	Multiple Holes, Surface Aggregate Projecting, Invert Missing Throughout Most Pipes	$1,038,800	$10,250,089	03310	2008	9	2018
26	Methuen Street	FY2016	New Project	14	12	VCP	4.34	5.74	297	19.10	724	3	3	5	3	3	5	1	**57**	Line All Pipes and Fix 1 Intruding Tap	Corrosion Issues, Infiltration and Breaks	$229,200	$10,479,289	08590	2015	2	2025
26	St. Michaels Cemetery 2	FY2016	New Project	12&13	15/20/24	VCP	5.17	5.45	950	13.40	660	3	3	5	3	3	5	1	**57**	Mix of Lining and Sectional Lining	Longitudinal Fractures at 12 o'clock	$259,500	$10,738,789	12282	2010	7	2020
26	Eastland St1	FY2016	New Project	10&11	10	VCP	5.70	4.40	117	11.40	860	3	3	5	4	1	4	1	**57**	Mix of Spot Repairs and Lining	Holes, Breaks, Fractures/Cracks	$282,000	$11,020,789	04330	2016	1	2026
26	PlumAbbottSt1	FY2013	Previously Removed by SWSC in 2013	15	10/12	VC	5.10	3.50	149	12.90	481	3	2	5	4	1	4	5	**57**	Dig and replace	Holes in invert of 2 pipes. Fractures/breaks in all segments.	$168,510	$11,189,299	09800	2011	6	2021
26	~~Larchmont Street~~	~~FY2015~~	~~To Be Completed - FY16~~	~~14, 15~~	~~10/12/15~~	~~VCP~~	~~4.50~~	~~4.50~~	~~264~~	~~11.00~~	~~1,547~~	~~3~~	~~3~~	~~5~~	~~4~~	~~1~~	~~4~~	~~1~~	~~**57**~~	~~Line All Pipes and 1 Spot Repair~~	~~Multiple Fractures and Breaks Throughout~~	~~$476,207~~	~~$11,665,506~~	~~09790, 07525~~	~~2015~~	~~3~~	~~2025~~
26	~~Roosevelt Ave~~	~~FY2015~~	~~Completed - FY15~~	~~17~~	~~12~~	~~VCP~~	~~3.39~~	~~3.39~~	~~204~~	~~12.30~~	~~1,042~~	~~2~~	~~2~~	~~5~~	~~4~~	~~5~~	~~4~~	~~5~~	~~**57**~~	~~Line All Pipes and 2 Spot Repairs, Further Inspection Needed~~	~~Multiple Fractures Throughout, Deformation, Joint Offset~~	~~$336,744~~	~~$12,002,249~~	~~10360~~	~~2007~~	~~10~~	~~2017~~
32	Plumtree Road5	FY2013	Previously Removed by SWSC in 2013	15	10	VC	5.10	2.64	316	8.00	575	3	2	5	4	1	3	5	**56**	CIPP Liner or sectional liner	Two large holes in two pipes	$201,196	$12,203,445	09800	2011	6	2021
32	Maura Street Easement	FY2015/FY2016	Original Project - FY15	7	10	VCP/ACP	5.40	5.00	975	7.00	950	3	3	5	2	5	5	1	**56**	Mix of Dig a Replace and CIPP Lining	Large Sags and Minor Holes and Fractures	$665,000	$12,868,445	12215	2015	2	2025
34	Allen Street3	FY2013	Previously Removed by SWSC in 2013	9	12	VC	5.10	3.86	120	5.30	398	3	2	5	4	1	2	5	**55**	Dig and repair	Broken pipe at 216' DS of 17CE - requires spot repair	$139,251	$13,007,696	00280A	2011	6	2021
34	~~CambridgeSt1~~	~~FY2014~~	~~Original Project - FY14~~	~~13~~	~~20~~	~~VCP~~	~~4.99~~	~~4.03~~	~~51~~	~~13.00~~	~~555~~	~~3~~	~~3~~	~~3~~	~~4~~	~~5~~	~~4~~	~~1~~	~~**55**~~	~~Coordinate with gas company. Line Pipe After Gas has Been Removed~~	~~Hinge Fractures/Breaks. Beware of crossbore gas main.~~	~~$166,500~~	~~$13,174,196~~	~~02270~~	~~0000~~	~~10+~~	~~2016~~
34	~~Page Blvd_1~~	~~FY2015~~	~~To Be Completed - FY16~~	~~3~~	~~12~~	~~VCP~~	~~4.60~~	~~4.60~~	~~42~~	~~8.70~~	~~288~~	~~3~~	~~3~~	~~2~~	~~4~~	~~5~~	~~3~~	~~5~~	~~**55**~~	~~Line Entire Pipe~~	~~1 Break, Cracks Throughout~~	~~$86,341~~	~~$13,260,537~~	~~09440~~	~~2005~~	~~12~~	~~2015~~
34	~~Worcester Street~~	~~FY2015~~	~~To Be Completed - FY16~~	~~1~~	~~12~~	~~VCP~~	~~4.15~~	~~4.15~~	~~60~~	~~8.00~~	~~295~~	~~3~~	~~3~~	~~3~~	~~4~~	~~2~~	~~3~~	~~5~~	~~**55**~~	~~Replace/Relocate 65' of Pipe~~	~~65' of Pipe has Guardrail Thru Crown~~	~~$45,500~~	~~$13,306,037~~	~~12525~~	~~0000~~	~~10+~~	~~2016~~
38	Plumtree Road1	FY2013	Previously Removed by SWSC in 2013	9, 15	12	VC	5.10	4.27	39	7.60	21	3	3	2	5	1	3	5	**54**	Dig and repair	COLLAPSED PIPE!!! Dig and repair at top of line near MH 11D4	$7,187	$13,313,224	09800	2011	6	2021
38	~~DwightRd1~~	~~FY2014~~	~~Original Project - FY14~~	~~10~~	~~18~~	~~VCP~~	~~6.00~~	~~4.60~~	~~46~~	~~10.90~~	~~352~~	~~4~~	~~3~~	~~2~~	~~4~~	~~1~~	~~4~~	~~3~~	~~**54**~~	~~Possibly combine with WhiteSt6. Dig and replace.~~	~~Hinge Fractures/Deformations/Breaks/Sag - only segment on street~~	~~$246,400~~	~~$13,559,624~~	~~04220~~	~~2010~~	~~7~~	~~2020~~
40	WAllenGifford1	FY2014	Original Project - FY14	16	10	VCP	4.98	3.49	335	11.50	1,922	3	2	5	4	1	4	1	**53**	Mix of Dig and Replace/Burst Line and Lining & 1 Spot Repair	Lots of breaks - one pipe in private property easement, carries good amount of flow. Other segments in ROW in similar condition, including hinge fractures/sags	$908,200	$14,467,824	05640	2004	13	2014

Note: This sheet combines all remaining FY2013-15 projects that have not yet been completed with all new FY2016 projects. Reference the legend at the bottom of the table for an explanation of the color coding of projects.

SWSC FY2013 - FY2016
ALL RECOMMENDED NON-CSO PROJECTS

											Weighting Factor														
											4	4	3	3	1	1	1								
Prioritized Project Rank	Project/Phase	FY Project Recommended	Status	Overview Sheet Number	Pipe Size (in)	Pipe Material	Project Risk Factor	Project Criticality Factor	# of Customers Potentially Affected by Failure	Maximum Project Depth	"Project" Length (LF)	Project Risk Value	Project Criticality Value	Potential Customer Impact	Predominant Defect Type	Impacts to Adjacent Utilities	Depth	Traffic Impact	Prioritization Score	Initial Recommended Resolution	Notes	Preliminary Project Cost	Cumaltive Project Cost	Street No	Year Paved (0000 = prior to 2002)	# Years Since Previous Paving	Year Eligible for Excavation (assuming 10 year moratorium)
40	IvySts1	FY2014	Original Project - FY14	6, 13	15	VCP/CONC	4.33	3.31	117	13.20	3,142	3	2	5	4	1	4	1	**53**	Mix of Dig and Replace and Lining & 1 Spot Repair	Concrete pipe with corrosion issues on various streets in neighborhood.	$1,581,000	$16,048,824	06380	2007	10	2017
40	Wilbraham Road	FY2015	Original Project - FY15	22	10	VCP	4.25	4.25	21	10.20	1,344	3	3	1	4	5	4	5	**53**	Line All Pipes	Multiple Fractures, Cracks and Breaks Throughout	$403,200	$16,452,024	12282	2011	6	2021
43	Jefferson Avenue1	FY2013	Previously Removed by SWSC in 2013	1	/12/15/18/2	VC/CONC	4.70	3.94	28	9.60	1,584	3	2	2	5	5	3	3	**52**	Dig and replace or burst	Mix of VC and unreinforced concrete in very bad condition. VC segments may be candidates for CIPP or slip lining. 36" and 12" W in street.	$554,566	$17,006,590	07075	2012	5	2022
43	NorwoodSt1	FY2014	Original Project - FY14	3	12	CONC	6.00	4.83	6	10.20	268	4	3	1	5	1	4	1	**52**	Dig and replace	Concrete pipe with corrosion issues and large offset joint/collapse. Only segment on street.	$187,600	$17,194,190	09150	0000	10+	2016
45	State Street1	FY2013	Previously Removed by SWSC in 2013	6, 7	18	CONC	4.35	3.69	11	7.70	1,884	3	2	1	5	5	3	5	**51**	Dig and replace or burst	Unreinforced concrete pipe - Significant missing wall defects causing abandoned surveys. Collapsed pipe with limited/no services. 24" W in street.	$659,360	$17,853,550	11110A	2010	7	2020
45	~~Liberty Street_2~~	~~FY2015~~	~~To Be Completed - FY16~~	~~10~~	~~15~~	~~VCP~~	~~3.22~~	~~4.60~~	~~42~~	~~8.40~~	~~211~~	~~2~~	~~3~~	~~2~~	~~5~~	~~2~~	~~3~~	~~5~~	~~**51**~~	~~1 Spot Repair and Line Pipe~~	~~1 Break and Fractures and Cracks Throughout~~	~~$75,336~~	~~$17,928,886~~	~~08980~~	~~2015~~	~~3~~	~~2025~~
45	NoelStreet1	FY2014	Original Project - FY14	3, 8	24	VCP	4.65	4.31	54	9.50	1,559	3	3	3	4	2	3	1	**51**	Dig and replace	Hinge Fractures/Breaks	$1,091,300	$19,020,186	09060	0000	10+	2016
45	GillmanCarr1	FY2014	Original Project - FY14	16	10	VCP/CONC	3.45	2.74	148	9.60	1,870	2	2	5	5	1	3	1	**51**	Dig and replace	Concrete pipe with corrosion issues, VC with breaks/hinge fractures. Significant flow in pipe.	$1,309,000	$20,329,186	02420	2005	12	2015
49	Roosevelt/Cambria	FY2016	New Project	32	8/10	VCP	3.00	3.25	655	7.30	204	2	2	5	2	5	3	5	**50**	Dig and Replace Both Siphons	2 siphons with various defects adjacent to each other	$142,800	$20,471,986	02260/10360	2000	10+	2016
50	Avon Place2	FY2013	Original Project - FY13	2	24	VC	6.62	4.89	22	13.60	694	4	3	1	4	1	4	1	**49**	Dig and replace	Severe Hinge Fractures - Limited sewer services - carries flows from former brook through cemetery	$485,855	$20,957,841	00850	2006	11	2016
50	~~MulberrySt1~~	~~FY2014~~	~~Completed - FY16~~	~~2~~	~~15~~	~~VCP/CONC~~	~~4.81~~	~~4.01~~	~~23~~	~~13.10~~	~~777~~	~~3~~	~~3~~	~~1~~	~~5~~	~~2~~	~~4~~	~~1~~	~~**49**~~	~~Dig and replace~~	~~Concrete pipe with corrosion issues and large offset joint/collapse~~	~~$543,900~~	~~$21,501,741~~	~~08885~~	~~0000~~	~~10+~~	~~2016~~
50	~~HancockFlorence1~~	~~FY2013~~	~~Completed - FY15~~	~~2~~	~~10/15~~	~~CONC~~	~~4.78~~	~~4.04~~	~~39~~	~~9.00~~	~~1,312~~	~~3~~	~~3~~	~~2~~	~~4~~	~~1~~	~~3~~	~~3~~	~~**49**~~	~~Dig and replace or burst~~	~~One segment on Florence may be candidate for CIPP~~	~~N/A~~	~~$21,501,741~~	~~06250~~	~~2010~~	~~7~~	~~2020~~
50	Newbury Street	FY2015	Original Project - FY15	9	10/12	VCP	4.60	4.70	32	11.00	1,053	3	3	2	3	3	4	3	**49**	Line All Pipes	1 Break, Multiple Fractures and Cracks Throughout	$315,909	$21,817,649	8980	2015	2	2025
50	GovernorSt1	FY2014	Original Project - FY14	5	18	VCP	4.25	3.76	77	7.10	621	3	2	4	4	1	3	1	**49**	Mix of dig and replace and CIPP Liners	Multiple fractures in VC	$310,500	$22,128,149	05850	2011	6	2021
50	WAllenRidgeRd1	FY2014	Original Project - FY14	16	10	VCP	3.19	2.31	104	11.10	621	2	2	5	4	1	4	1	**49**	Dig and Replace	Several grade issues/sags, breaks, hinge fractures.	$434,700	$22,562,849	12150	2005	12	2015
56	Page Blvd_3	FY2015	Original Project - FY15	5	15	VCP	4.30	4.30	11	7.70	211	3	3	1	3	4	3	5	**48**	Line Entire Pipe	Fractures and Cracks Throughout, Infiltration	$63,181	$22,626,030	09440	0000	10+	2016
56	FederalSt1	FY2014	Original Project - FY14	6	12	CONC	5.12	4.98	4	10.50	567	3	3	1	5	1	4	1	**48**	Dig and replace	COLLAPSED! Concrete pipe with corrosion issues.	$396,900	$23,022,930	04997	0000	10+	2016
56	Redden Road	FY2015	Original Project - FY15	20	10	VCP	4.60	4.60	29	11.30	328	3	3	2	4	1	4	1	**48**	Line Entire Pipe	Multiple Fractures and a Hole	$98,514	$23,121,445	10110	0000	10+	2016
56	Chestnut Edwards	FY2014	Original Project - FY14	2	18	CONC	4.31	4.40	6	9.70	587	3	3	1	4	1	3	5	**48**	Dig and Replace	Concrete pipe with corrosion issues.	$410,900	$23,532,345	04460	0000	10+	2016
56	LaurenceStArea1	FY2014	Original Project - FY14	5, 12	10	CONC/ACP	2.12	2.58	150	9.60	2,224	2	2	5	4	1	3	1	**48**	CIPP Liner with spot repairs	Concrete pipe with corrosion issues. Heavy flow. Preventative Project. Lowest segment in project has holes.	$667,200	$24,199,545	07565	0000	10+	2016

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SWSC FY2013 - FY2016
ALL RECOMMENDED NON-CSO PROJECTS

											Weighting Factor													
											4	4	3	3	1	1	1							
Prioritized Project Rank	Project/Phase	FY Project Recommended	Status	Overview Sheet Number	Pipe Size (in)	Pipe Material	Project Risk Factor	Project Criticality Factor	# of Customers Potentially Affected by Failure	Maximum Project Depth	"Project" Length (LF)	Project Risk Value	Project Criticality Value	Potential Customer Impact	Predominant Defect Type	Impacts to Adjacent Utilities	Depth	Traffic Impact	Prioritization Score	Initial Recommended Resolution	Notes	Preliminary Project Cost	Cumaltive Project Cost	Street No	Year Paved (0000 = prior to 2002)	# Years Since Previous Paving	Year Eligible for Excavation (assuming 10 year moratorium)
61	Bridle Path Road	FY2016	New Project	34	10	VCP	4.10	3.80	32	15.50	604	3	2	2	4	3	5	1	**47**	Dig and Replace or Pipe Burst	Breaks, Deformations, Hinge Fractures, Fractures	$422,800	$24,622,345	01845	2003	14	2013
61	East Park Street1	FY2013	Original Project - FY13	2	18/24	VC	5.45	5.07	32	9.80	786	3	3	2	4	1	3	1	**47**	Dig and replace	Severe hinge fractures/deformation.	$549,970	$25,172,315	09497	2009	8	2019
61	~~Eastern Avenue2~~	~~FY2013~~	~~Original Project - FY13~~	~~7~~	~~8/10/12~~	~~VC/CONC~~	~~5.20~~	~~3.46~~	~~14~~	~~8.70~~	~~1,512~~	~~3~~	~~2~~	~~1~~	~~5~~	~~3~~	~~3~~	~~3~~	~~47~~	~~Dig and replace~~	~~COLLAPSED PIPE!!! Unreinforced concrete pipe - Significant missing wall defects causing abandoned surveys. Significant grease issues in some of the pipes - assumed in poor condition.~~	~~$1,058,177~~	~~$26,230,492~~	~~04325~~	~~0000~~	~~10+~~	~~2016~~
61	Melrose to Hickory1	FY2013	Original Project - FY13	8	18	VC	4.82	5.49	31	6.70	424	3	3	2	4	1	3	1	**47**	CIPP liner	Severe hinge Cracking/Fracturing in VC pipe - Under a building.	$127,290	$26,357,782	08520	2007	10	2017
61	Morgan Street	FY2015	Original Project - FY15	13	18	VCP	4.60	4.60	6	8.58	230	3	3	1	5	1	3	1	**47**	Dig and Replace Entire Pipe	Multiple Holes	$161,151	$26,518,933	08830	0000	10+	2016
61	Blaine Street1	FY2014	Original Project - FY14	10	15	VCP	4.51	3.03	74	10.90	328	3	2	3	4	1	4	1	**47**	Dig and Replace	Hinge Fractures/breaks. Only segment on street requiring repair.	$229,600	$26,748,533	01520	0000	10+	2016
67	Aldrew Terrace	FY2016	New Project	20/21	10	VCP	4.25	5.20	39	7.80	1,125	3	3	2	3	3	3	1	**46**	Mix of Dig and Replace and CIPP Lining	Breaks, Fractures and Cracks. Consider Combining with CatalpaTerrace.	$480,300	$27,228,833	00220	2000	17	2010
67	~~Tyler Street2~~	~~FY2013~~	~~Completed - FY15~~	~~7~~	~~10/15/18~~	~~CONC~~	~~5.29~~	~~3.43~~	~~47~~	~~8.00~~	~~1,645~~	~~3~~	~~2~~	~~2~~	~~5~~	~~1~~	~~3~~	~~1~~	~~46~~	~~Dig and replace or burst~~	~~Unreinforced concrete pipe - Significant missing wall defects causing abandoned surveys.~~	~~N/A~~	~~$27,228,833~~	~~11715~~	~~0000~~	~~10+~~	~~2016~~
67	~~Quincy Street1~~	~~FY2013~~	~~Completed - FY15~~	~~7~~	~~12~~	~~CONC~~	~~4.99~~	~~3.38~~	~~35~~	~~8.90~~	~~1,362~~	~~3~~	~~2~~	~~2~~	~~5~~	~~1~~	~~3~~	~~1~~	~~46~~	~~Dig and replace or burst~~	~~Unreinforced concrete pipe - Significant missing wall defects causing abandoned surveys.~~	~~N/A~~	~~$27,228,833~~	~~10015~~	~~2004~~	~~13~~	~~2014~~
67	~~Quincy Street2~~	~~FY2013~~	~~Completed - FY15~~	~~7~~	~~15/18~~	~~CONC~~	~~4.48~~	~~3.51~~	~~40~~	~~9.60~~	~~1,339~~	~~3~~	~~2~~	~~2~~	~~5~~	~~1~~	~~3~~	~~1~~	~~46~~	~~Dig and replace or burst~~	~~COLLAPSED PIPE!!! Unreinforced concrete pipe - Significant missing wall defects causing abandoned surveys.~~	~~N/A~~	~~$27,228,833~~	~~10015~~	~~2004~~	~~13~~	~~2014~~
67	Allen Street9	FY2014	Original Project - FY14	16	10	VCP	5.30	3.25	10	6.80	571	3	2	1	4	3	3	5	**46**	Dig and Replace	Hinge Fractures/holes. Top of line sewer - minimal flow, but under major roadway. Low Priority	$399,700	$27,628,533	00280	2007	10	2017
72	Dwight Road Easement	FY2016	New Project	35	8	ACP	5.10	3.61	38	18.20	250	3	2	2	4	1	5	1	**45**	Dig and Replace or Pipe Burst	Hole in Crown of Pipe and Large Sag.	$175,000	$27,803,533	N/A	N/A	N/A	N/A
72	~~Cross Street1~~	~~FY2013~~	~~Completed - FY14~~	~~2~~	~~10~~	~~VC~~	~~6.00~~	~~3.25~~	~~11~~	~~8.20~~	~~390~~	~~4~~	~~2~~	~~1~~	~~4~~	~~2~~	~~3~~	~~1~~	~~45~~	~~Dig and replace~~	~~SWSC partially repaired - recommend dig/replace entire pipe~~	~~N/A~~	~~$27,803,533~~	~~03470~~	~~2004~~	~~13~~	~~2014~~
72	WilliamSt1	FY2014	Original Project - FY14	2	12	VCP	5.10	5.28	16	10.50	351	3	3	1	4	1	4	1	**45**	Consider combining with Lombard/Norwood/Wilcox. Dig and Replace.	Hinge Fractures/Breaks.	$245,700	$28,049,233	12300	0000	10+	2016
72	Saint James Avenue	FY2015	Original Project - FY15	7	10	VCP	5.10	3.70	5	7.80	275	3	2	1	4	2	3	5	**45**	Dig and Replace or Pipe Burst	Breaks, Fractures and Cracks Throughout	$82,369	$28,131,602	11170	2010	7	2020
76	Tyler Street1	FY2016	New Project	28	15/18	VCP	5.03	4.18	40	8.10	1,557	3	3	2	3	1	3	1	**44**	CIPP Lining	Breaks, Fractures and Cracks	$491,100	$28,622,702	11715	2000	17	2010
76	Cooley Street2	FY2013	Original Project - FY13	20	10	VC	5.10	3.86	#N/A	12.40	151	3	2	1	3	3	4	5	**44**	CIPP liner	Small holes, but severe gusher infiltration. SEVERE INFILTRATION AT MH 83B.	$45,229	$28,667,930	03170	2008	9	2018
76	Greene Street1	FY2013	Original Project - FY13	7	15/18	CONC	4.32	3.63	44	11.90	1,403	3	2	2	4	1	4	1	**44**	Dig and replace or burst	Surface Corrosion in Conc pipe - some missing wall defects	$982,094	$29,650,024	06032	0000	10+	2016
79	Plumtree Rd8	FY2016	New Project	22&23	10	CP	4.58	3.90	60	9.90	1,741	3	2	2	3	4	3	1	**43**	Dig and Replace or Pipe Burst	Breaks and Corrosion Issues. Can be combined with Plumtree Rd6&7	$1,218,700	$30,868,724	09800	2013	4	2023
79	Curve Street	FY2016	New Project	1	12	VCP	4.20	3.40	44	7.50	1,258	3	2	2	4	1	3	1	**43**	Mix of Dig and Replace and CIPP Lining	Holes, Breaks and Fractures/Cracks	$492,000	$31,360,724	03560	2000	17	2010

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SWSC FY2013 - FY2016
ALL RECOMMENDED NON-CSO PROJECTS

											Weighting Factor													
											4	4	3	3	1	1	1							
Prioritized Project Rank	Project/Phase	FY Project Recommended	Status	Overview Sheet Number	Pipe Size (in)	Pipe Material	Project Risk Factor	Project Criticality Factor	# of Customers Potentially Affected by Failure	Maximum Project Depth	"Project" Length (LF)	Project Risk Value	Project Criticality Value	Potential Customer Impact	Predominant Defect Type	Impacts to Adjacent Utilities	Depth	Traffic Impact	Prioritization Score	Initial Recommended Resolution	Notes	Preliminary Project Cost	Cumaltive Project Cost	Street No	Year Paved (0000 = prior to 2002)	# Years Since Previous Paving	Year Eligible for Excavation (assuming 10 year moratorium)
79	Progress Ave	FY2016	New Project	5	10	ACP	3.20	2.80	15	12.40	1,773	2	2	1	5	4	4	1	**43**	Dig and Replace or Pipe Burst	Large Holes with Sand Entering Pipe. Combine with Cottage Street Project (is likely root cause of scouring throughout the line).	$1,241,100	$32,601,824	09945	2000	17	2010
79	Springfield College	FY2016	New Project	29	10	VCP	5.10	4.30	2	8.40	942	3	3	1	3	3	3	1	**43**	CIPP Line	Breaks, 1 Hole, Fractures/Cracks. Services Springfield College Buildings Adjacent to Sports Fields.	$294,600	$32,896,424	00200	2011	6	2021
79	Hunt Street1	FY2013	Original Project - FY13	8	10	VC	5.99	3.25	11	8.50	273	3	2	1	5	1	3	1	**43**	Only segment on street requiring repair - Suggested dig and replace/burst	Poor condition - holes/collapses on dead end street	$191,235	$33,087,659	06860	2005	12	2015
79	Spruce Street1	FY2013	Original Project - FY13	8	12	CONC	4.63	3.52	12	8.80	602	3	2	1	5	1	3	1	**43**	Dig and replace or burst	COLLAPSED PIPE!!! Unreinforced concrete pipe - Significant missing wall defects causing abandoned surveys.	$421,359	$33,509,018	11060	0000	10+	2016
79	~~Queen Street1~~	~~FY2013~~	~~Completed - FY14~~	~~7~~	~~12~~	~~CONC~~	~~4.54~~	~~3.66~~	~~14~~	~~9.10~~	~~669~~	~~3~~	~~2~~	~~1~~	~~5~~	~~1~~	~~3~~	~~1~~	~~43~~	~~Dig and replace or burst~~	~~COLLAPSED PIPE!!! Unreinforced concrete pipe - Significant missing wall defects causing abandoned surveys.~~	~~N/A~~	~~$33,509,018~~	~~10005~~	~~0000~~	~~10+~~	~~2016~~
79	South Branch Sewer Extension1	FY2013	Original Project - FY13	19	27	RCP	4.51	4.95	#N/A	15.70	784	3	3	1	3	1	5	1	**43**	CIPP Liner	One segment with severe infiltration - additional adjacent segments with some infiltration. Lots of flow to bypass.	$235,210	$33,744,228	11010	0000	10+	2016
79	Thorndyke Street1	FY2013	Original Project - FY13	9	12	VC	4.27	3.25	27	7.70	300	3	2	2	4	1	3	1	**43**	Only segment on street requiring repair - Suggested dig and replace/burst - limited customers affected	VC with breaks and other fractures	$210,194	$33,954,422	11530	2005	12	2015
79	GrosvenorSt1	FY2014	Original Project - FY14	1	18	CONC	4.13	3.75	15	10.00	824	3	2	1	4	1	4	3	**43**	Dig and Replace	Concrete pipe with corrosion issues/holes	$576,800	$34,531,222	06090	1998	19	2008
89	Roosevelt Ave2	FY2016	New Project	2	10	CP	5.10	3.90	17	6.00	829	3	2	1	4	3	3	1	**42**	Dig and Replace or Pipe Burst	Holes, Breaks and Fractures and Corrosion Issues. Can be combined with Roosevelt Ave2	$580,300	$35,111,522	010360	2015	2	2025
89	FresnoSt	FY2016	New Project	9	10	VCP	3.50	3.10	34	10.40	1,250	2	2	2	4	3	4	1	**42**	CIPP Line	Breaks, Fractures and Cracks	$387,000	$35,498,522	05420	2017	0	2027
89	AcushnetAve1	FY2014	Original Project - FY14	3	12	VCP	5.00	3.03	13	5.40	97	3	2	1	5	1	2	1	**42**	Dig and Replace	Hinge Fractures/Breaks/Collapse. High PF, low risk. Only segment on street requiring repair	$67,900	$35,566,422	00080	0000	10+	2016
92	Prentice Street	FY2016	New Project	3	10	VCP	4.10	3.36	22	7.90	530	3	2	1	4	2	3	1	**41**	Mix of Dig and Replace and CIPP Lining	Breaks, Fractures and Cracks	$265,000	$35,831,422	09900	2000	17	2010
92	Conklin Street1	FY2016	New Project	30	10/12	VCP	4.35	3.50	8	8.80	400	3	2	1	4	1	3	2	**41**	Dig and Replace or Pipe Burst	Hinge Fracture, Sagging and Fractures	$120,000	$35,951,422	03120	2000	17	2010
92	~~Pendelton Avenue2~~	~~FY2013~~	~~Completed - FY15~~	~~7~~	~~12/15~~	~~CONC~~	~~4.72~~	~~3.54~~	~~35~~	~~14.30~~	~~1,395~~	~~3~~	~~2~~	~~2~~	~~3~~	~~1~~	~~4~~	~~1~~	~~41~~	~~Dig and replace or burst~~	~~Surface Corrosion in Conc pipe - dead end street~~	~~N/A~~	~~$35,951,422~~	~~09630~~	~~2007~~	~~10~~	~~2017~~
92	Davis Court1	FY2013	Original Project - FY13	2	12	VC	4.15	3.45	3	11.30	201	3	2	1	4	1	4	1	**41**	Only segment on street requiring repair - Suggested dig and replace/burst - limited customers affected	Hinge fractures/deformation in VC pipe.	$140,542	$36,091,964	N/A	#N/A	#N/A	#N/A
92	Catherine Street1	FY2013	Original Project - FY13	6, 13	10	VC	4.00	2.84	12	7.90	384	3	2	1	4	2	3	1	**41**	Only segment on street requiring repair - Suggested dig and replace/burst - limited customers affected	VC with some significant holes/cracking/fracturing	$268,794	$36,360,758	02512	2006	11	2016
92	DesrosiersSt1	FY2014	Original Project - FY14	1	10	VCP	5.10	4.15	12	6.20	208	3	3	1	3	1	3	1	**41**	Dig and Replace	2 large sags, multiple fractures and breaks in VC	$145,600	$36,506,358	03860	0000	10+	2016
98	Van Horn Park	FY2016	New Project	8	12	VCP	3.72	4.69	156	16.90	633	2	3	2	2	2	5	1	**40**	Line All Pipes	Significant fractures throughout pipes	$189,816	$36,696,174	N/A	N/A	N/A	N/A
98	~~Monroe Street1~~	~~FY2013~~	~~Completed - FY16~~	~~7~~	~~15~~	~~CONC~~	~~5.98~~	~~3.86~~	~~2~~	~~7.30~~	~~316~~	~~3~~	~~2~~	~~1~~	~~4~~	~~1~~	~~3~~	~~1~~	~~40~~	~~Dig and replace or burst~~	~~Surface Corrosion in Conc pipe. Top of line/dead end segment~~	~~$221,271~~	~~$36,917,445~~	~~08760~~	~~2006~~	~~11~~	~~2016~~
98	Colchester Street1	FY2013	Original Project - FY13	8	10/12	VC	5.04	3.93	15	9.00	626	3	2	1	4	1	3	1	**40**	Dig and replace or burst	VC with hinge cracking/fracturing. Top of line/dead end segment	$438,319	$37,355,765	02970	2007	10	2017

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ALL RECOMMENDED NON-CSO PROJECTS

											Weighting Factor													
											4	4	3	3	1	1	1							
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98	~~Union Street2~~	~~FY2013~~	~~Completed - FY15~~	~~7~~	~~10/15/18~~	~~VC/CONC~~	~~4.77~~	~~3.91~~	~~23~~	~~7.90~~	~~1,645~~	~~3~~	~~2~~	~~1~~	~~4~~	~~1~~	~~3~~	~~1~~	~~40~~	~~Dig and replace or burst~~	~~Surface Corrosion in Conc pipe - some missing wall defects~~	~~N/A~~	~~$37,355,765~~	~~11750~~	~~0000~~	~~10+~~	~~2016~~
98	King Street1	FY2013	Original Project - FY13	7	12/15	CONC	4.70	3.29	28	9.40	948	3	2	2	3	1	3	1	**40**	Dig and replace or burst	Surface Corrosion in Conc pipe.	$663,566	$38,019,330	07295	0000	10+	2016
98	Ingersoll Street2	FY2013	Original Project - FY13	6	12	VC	4.42	2.84	6	6.10	96	3	2	1	4	1	3	1	**40**	Possibly line after repair to top of pipe from within electrical MH	VC with breaks - One break has telecomm or elec MH visible at 12 o'clock - Top of line/dead end segment	$28,835	$38,048,165	06925	0000	10+	2016
98	~~Alden Street1~~	~~FY2013~~	~~Completed - FY15~~	~~8~~	~~15/18~~	~~CONC~~	~~3.98~~	~~3.46~~	~~41~~	~~9.80~~	~~1,413~~	~~2~~	~~2~~	~~2~~	~~3~~	~~5~~	~~3~~	~~1~~	~~40~~	~~Dig and replace or burst~~	~~Unreinforced concrete pipe - missing wall defects, 115 kV duct bank on street (197-U001)~~	~~N/A~~	~~$38,048,165~~	~~00200B~~	~~0000~~	~~10+~~	~~2016~~
98	Nelson Avenue1	FY2013	Original Project - FY13	7	10	CONC	3.73	2.64	7	12.10	255	2	2	1	5	1	4	1	**40**	Dig and replace	Material change from VC to CP halfway through, CONC has significant missing wall defects. Dead end street.	$178,329	$38,226,494	08960	2007	10	2017
98	Willow Street1	FY2013	Original Project - FY13	2	10/12/18	VC	3.38	3.54	11	10.50	936	2	2	1	5	1	4	1	**40**	Dig and replace	COLLAPSED PIPE!!! VC with significant cracks/fractures/holes	$655,378	$38,881,873	12310	0000	10+	2016
98	CapitolRd1	FY2014	Original Project - FY14	18	10	VCP	4.27	3.33	8	6.10	381	3	2	1	4	1	3	1	**40**	Dig and Replace	Hinge fractures in non-critical line.	$266,700	$39,148,573	02345	0000	10+	2016
98	MeridaSt1	FY2014	Original Project - FY14	12	10	VCP	3.65	2.85	48	10.30	1,102	2	2	2	4	1	4	1	**40**	Dig and replace	Various holes/breaks in invert.	$771,400	$39,919,973	08550	0000	10+	2016
109	Plumtree Rd7	FY2016	New Project	24	10	CP	3.80	3.80	36	9.90	985	2	2	3	3	1	3	1	**39**	Dig and Replace or Pipe Burst	Corrosion Issues Throughout Pipes. Can be combined with Plumtree Rd6&8	$689,500	$40,609,473	09800	2013	4	2023
109	Allen Street5	FY2013	Original Project - FY13	9	10	VC	4.57	2.64	7	10.40	317	3	2	1	2	1	4	5	**39**	Dig and replace or burst	Sag in pipe, some fractures - Top of line/dead end segment	$222,161	$40,831,634	00280E	0000	10+	2016
109	Howes Street1	FY2013	Original Project - FY13	9	10/12	VC	3.57	2.92	25	8.90	657	2	2	2	4	1	3	1	**39**	CIPP liner	Multiple sections of VC with hinge cracks/fractures. Not deformed. Top of line/dead end segment	$197,101	$41,028,735	06806	2006	11	2016
109	Orleans Street1	FY2013	Original Project - FY13	7	10	CONC	3.32	2.43	5	8.30	187	2	2	1	5	1	3	1	**39**	Only segment on street requiring repair - Suggested dig and replace/burst - limited customers affected	ABANDONED!! Abandoned due to very large hole in invert of the pipe. Surface corrosion throughout pipe. Top of line/dead end segment	$131,001	$41,159,735	09362	2003	14	2013
109	Braddock Street1	FY2013	Original Project - FY13	14	10	ACP	3.20	2.43	5	7.70	207	2	2	1	5	1	3	1	**39**	Only segment on street requiring repair - Suggested dig and replace/burst - limited customers affected	COLLAPSED PIPE!!! VC in very poor shape for part of survey. Top of line/dead end segment	$145,089	$41,304,824	01730	2001	16	2011
109	Woodcliff Street1	FY2013	Original Project - FY13	17	10	VC	3.19	2.59	16	7.30	301	2	2	1	5	1	3	1	**39**	Dig and replace	COLLAPSE!!! Hole in side of one segment of pipe. Cracking/fracturing throughout. Significant flow (likely heavy infiltration or carrying former creek)	$210,596	$41,515,419	12450	2009	8	2019
109	Silas Street1	FY2013	Original Project - FY13	17	10	VC	3.19	2.43	4	8.20	167	2	2	1	5	1	3	1	**39**	Only segment on street requiring repair - Suggested dig and replace/burst - limited customers affected	Survey abandoned due to hole in invert of pipe. Pipe switches to CP partially through run. Top of line/dead end segment	$116,735	$41,632,154	10865	0000	10+	2016
109	CarewTerrace1	FY2014	Original Project - FY14	12	10	VCP	3.65	3.39	28	6.10	817	2	2	2	4	1	3	1	**39**	Dig and Replace	Various fractures/breaks in non-critical line.	$571,900	$42,204,054	02362	0000	10+	2016
109	MiddleSt1	FY2014	Original Project - FY14	5, 12	10	VCP	3.26	2.58	38	7.60	324	2	2	2	4	1	3	1	**39**	Dig and replace	Various holes and cracking/fracturing. Only segment in street.	$226,800	$42,430,854	08615	0000	10+	2016
109	Irene Street1	FY2014	Original Project - FY14	11	10	ACP	3.26	2.58	21	7.20	896	2	2	1	5	1	3	1	**39**	Dig and Replace	Concrete pipe with corrosion and collapse.	$627,200	$43,058,054	06963	0000	10+	2016
109	HartwickSt1	FY2014	Original Project - FY14	11	10	CONC	3.19	2.58	37	6.60	435	2	2	2	4	1	3	1	**39**	CIPP Liner or Dig and Replace. Monitor other CONC in neighborhood on Sedgewick, Mayfield, Varney, Weymouth)	Concrete pipe with corrosion issues.	$304,500	$43,362,554	06375	2006	11	2016
120	Catalpa Terrace	FY2016	New Project	20/21	10	VCP	3.69	3.57	32	7.80	1,010	2	2	2	3	3	3	1	**38**	Mix of Dig and Replace and CIPP Lining	Breaks, Fractures and Cracks. Consider Combining with Aldrew Terrace.	$466,200	$43,828,754	02500	2000	17	2010

Note: This sheet combines all remaining FY2013-15 projects that have not yet been completed with all new FY2016 projects. Reference the legend at the bottom of the table for an explanation of the color coding of projects.

SWSC FY2013 - FY2016
ALL RECOMMENDED NON-CSO PROJECTS

											Weighting Factor													
											4	4	3	3	1	1	1							
Prioritized Project Rank	Project/Phase	FY Project Recommended	Status	Overview Sheet Number	Pipe Size (in)	Pipe Material	Project Risk Factor	Project Criticality Factor	# of Customers Potentially Affected by Failure	Maximum Project Depth	"Project" Length (LF)	Project Risk Value	Project Criticality Value	Potential Customer Impact	Predominant Defect Type	Impacts to Adjacent Utilities	Depth	Traffic Impact	Prioritization Score	Initial Recommended Resolution	Notes	Preliminary Project Cost	Cumaltive Project Cost	Street No	Year Paved (0000 = prior to 2002)	# Years Since Previous Paving	Year Eligible for Excavation (assuming 10 year moratorium)
120	Gillette Avenue1	FY2013	Original Project - FY13	16	10	VC	2.21	1.82	44	6.80	298	2	1	2	5	1	3	1	**38**	Dig and replace	COLLAPSED PIPE!!! Crack hinging causing partial collapse. Possible spot repair, but it would be long. Likely dig and replace	$208,720	$44,037,475	05660	0000	10+	2016
120	GrovelandSt1	FY2014	Original Project - FY14	4, 10	12	VCP	4.26	3.37	44	13.40	532	3	2	2	2	1	4	1	**38**	CIPP Liner or Dig and Replace.	Multiple fractures.	$372,400	$44,409,875	06120	2007	10	2017
120	LocustSt2	FY2014	Original Project - FY14	3, 8	20	VCP	3.52	2.88	15	6.50	1,131	2	2	1	4	1	3	3	**38**	Possibly add this to Main Interceptor project (if Locust St becomes viable corridor for new infrastructure)	Hinge Fractures/Breaks.	$339,300	$44,749,175	07860	0000	10+	2016
124	Plumtree Rd6	FY2016	New Project	25	10	VCP	5.10	3.60	19	9.40	900	3	2	1	3	1	3	1	**37**	Dig and Replace or Pipe Burst	Breaks, Fractures and Cracks. Can be combined with Plumtree Rd7&8	$630,000	$45,379,175	02500	2000	17	2010
124	Roosevelt Ave3	FY2016	New Project	2	10	CP	4.30	3.60	7	5.60	502	3	2	1	3	3	1	1	**37**	Dig and Replace or Pipe Burst	Breaks, Fractures and Corrosion Issues. Can be combined with Roosevelt Ave3	$351,400	$45,730,575	10360	2015	**2**	2025
124	Pleasant Street1	FY2013	Original Project - FY13	6, 7	12	CONC	5.41	3.86	1	7.80	296	3	2	1	3	1	3	1	**37**	Possible CIPP?	Surface Corrosion in Conc pipe. Top of line/dead end segment.	$88,823	$45,819,397	09785	0000	10+	2016
124	PendletonOrleans1	FY2013	Original Project - FY13	7	12	CONC	3.93	3.41	27	10.70	1,756	2	2	2	3	1	4	1	**37**	Dig and replace or burst	Unreinforced concrete pipe - missing wall defects	$1,229,392	$47,048,789	09630	2007	10	2017
124	Bowdoin Terrace1	FY2013	Original Project - FY13	6, 7	10	VC	3.54	2.84	3	11.00	192	2	2	1	4	1	4	1	**37**	Dig and replace	VC with hinge cracking/fracturing/holes - Top of line/dead end segment	$134,053	$47,182,842	01682	0000	10+	2016
124	~~WilcoxSt1~~	~~FY2014~~	~~To Be Completed FY16~~	~~2~~	~~15~~	~~CONC~~	~~4.45~~	~~3.92~~	~~22~~	~~9.70~~	~~829~~	~~3~~	~~2~~	~~1~~	~~3~~	~~1~~	~~3~~	~~1~~	~~**37**~~	~~Consider combining with Lombard/William/Norwood. Dig and Replace.~~	~~Concrete pipe with corrosion issues.~~	~~$580,300~~	~~$47,763,142~~	~~12285~~	~~2005~~	~~12~~	~~2015~~
124	Lombard Street1	FY2014	Original Project - FY14	3	12	CONC	4.06	3.78	16	7.80	750	3	2	1	3	1	3	1	**37**	Dig and replace	Concrete pipe with corrosion issues. Consider combining with Norwood/William/Wilcox	$525,000	$48,288,142	07875	2005	12	2015
124	TraftonRd1	FY2014	Original Project - FY14	4	10	VCP	3.19	2.58	4	5.90	239	2	2	1	4	3	2	1	**37**	Dig and replace after investigation of crossbore	Various breaks/holes in non-critical line. Top of line sewer. Beware of cross-bore at 194' DS.	$167,300	$48,455,442	11610	0000	10+	2016
132	Euclid Avenue1	FY2013	Original Project - FY13	3	10	VC	3.49	2.02	28	9.80	371	2	2	2	3	1	3	1	**36**	CIPP liner	Various cracks/fractures/breaks	$111,184	$48,566,625	04760	2007	**10**	2017
132	Old Point Street1	FY2013	Original Project - FY13	17	10	VC	3.20	2.43	11	6.40	271	2	2	1	4	1	3	1	**36**	Only segment on street requiring repair - Suggested dig and replace/burst - limited customers affected	Severe hinge fractures. Deformed pipe - Breaks. Top of line/dead end segment	$189,572	$48,756,197	09275	0000	10+	2016
132	FosterSt1	FY2014	Original Project - FY14	8	12	VCP/CONC	3.91	3.48	25	7.40	772	2	2	2	3	1	3	1	**36**	Dig and Replace	Concrete pipe with corrosion issues, VC with breaks/fractures	$540,400	$49,296,597	05320	2012	**5**	2022
132	HomerSt_AIC1	FY2014	Original Project - FY14	13	10	VCP	3.68	3.33	1	8.60	449	2	2	1	4	1	3	1	**36**	Coordinate with American International College. Dig and Replace.	Significant fractures/breaks. Affects AIC.	$314,300	$49,610,897	06745	2009	**8**	2019
132	ForestParkAve1	FY2014	Original Project - FY14	4	10	VCP	3.20	2.58	6	8.20	386	2	2	1	4	1	3	1	**36**	CIPP Liner or Dig and Replace.	Various breaks/holes in non-critical line. Top of line sewer.	$270,200	$49,881,097	05280	2006	11	2016
132	Embassy Road	FY2015	Original Project - FY15	21	10	VCP	3.19	2.58	11	8.35	179	2	2	1	4	1	3	1	**36**	Replace Sag, Line Entire Pipe	30 FT Sag (25% Water Level), 1 Break, Crack Multiples, Joint Offset Medium	$54,405	$49,935,502	04635	0000	10+	2016
138	Riverview Street1	FY2013	Original Project - FY13	3	10	VC	3.11	2.43	8	5.40	299	2	2	1	4	1	2	1	**35**	Only segment on street requiring repair - Suggested dig and replace/burst - limited customers affected	Hinge fractures/multiple cracking 43-52ish	$209,004	$50,144,506	10285	2006	11	2016
139	White Oak Road1	FY2013	Original Project - FY13	19, 20	10	ACP	2.96	2.02	37	14.00	205	2	2	2	2	1	4	1	**34**	Suggested dig and replace/burst - limited customers affected	Significant sagging in entire line	$143,521	$50,288,027	12230	0000	10+	2016
139	PiedmontSt1	FY2014	Original Project - FY14	12	10	VCP/ACP	3.02	2.70	18	10.30	635	2	2	1	3	1	4	1	**34**	CIPP Liner or Dig and Replace.	Some Fractures/breaks. Combine with downstream Conc pipe	$444,500	$50,732,527	09700	0000	10+	2016

Note: This sheet combines all remaining FY2013-15 projects that have not yet been completed with all new FY2016 projects. Reference the legend at the bottom of the table for an explanation of the color coding of projects.

SWSC FY2013 - FY2016
ALL RECOMMENDED NON-CSO PROJECTS

											Weighting Factor													
											4	4	3	3	1	1	1							
Prioritized Project Rank	Project/Phase	FY Project Recommended	Status	Overview Sheet Number	Pipe Size (in)	Pipe Material	Project Risk Factor	Project Criticality Factor	# of Customers Potentially Affected by Failure	Maximum Project Depth	"Project" Length (LF)	Project Risk Value	Project Criticality Value	Potential Customer Impact	Predominant Defect Type	Impacts to Adjacent Utilities	Depth	Traffic Impact	Prioritization Score	Initial Recommended Resolution	Notes	Preliminary Project Cost	Cumaltive Project Cost	Street No	Year Paved (0000 = prior to 2002)	# Years Since Previous Paving	Year Eligible for Excavation (assuming 10 year moratorium)
141	Dunmoreland Street1	FY2013	Original Project - FY13	14	10	VC	3.18	2.84	12	6.50	319	2	2	1	3	1	3	1	**33**	Only segment on street requiring repair - Suggested dig and replace/burst - limited customers affected	Large Separated joint, Pipe settled. Large Sag in pipe. Top of line - limited consequences	$223,573	$50,956,100	04150	0000	10+	2016
141	Wellington Street2	FY2013	Original Project - FY13	14	10	VC	3.09	2.43	33	6.80	374	2	2	2	2	1	3	1	**33**	Suggested dig and replace/burst - limited customers affected	Some significant cracking/fracturing	$262,061	$51,218,161	12110B	2001	16	2011
141	Judith Street1	FY2013	Original Project - FY13	14	10	CONC	2.80	2.61	23	7.50	1,048	2	2	1	3	1	3	1	**33**	CIPP liner	Plain Concrete - corrosion, but not as bad/old as others - No immediacy	$314,401	$51,532,562	07165	2008	9	2018
141	MarbleSt1	FY2014	Original Project - FY14	3	12	CONC/ACP	3.58	3.59	14	8.20	486	2	2	1	3	1	3	1	**33**	Upcoming roadway work, consider replacement.	Concrete pipe with some corrosion. Not as bad as other unreinforced concrete pipes in the system	$145,800	$51,678,362	08235	2012	5	2022
141	MarylandSt1	FY2014	Original Project - FY14	4	10	VCP	3.19	2.13	27	8.00	680	2	2	2	2	1	3	1	**33**	Dig and replace	Some significant fractures and breaks in non-critical line	$476,000	$52,154,362	08340	2006	11	2016
141	RamahSt1	FY2014	Original Project - FY14	12	10	ACP	2.54	2.25	12	9.20	621	2	2	1	3	1	3	1	**33**	CIPP Liner. Dig and repair sag.	VC with fractures/sag and CONC with corrosion.	$186,300	$52,340,662	10040	0000	10+	2016

LEGEND

	PROJECTS PROPOSED IN FY2016
	PROJECTS PROPOSED IN FY2015
	PROJECTS PROPOSED IN FY2014
	PROJECTS PROPOSED IN FY2013

Note: This sheet combines all remaining FY2013-15 projects that have not yet been completed with all new FY2016 projects. Reference the legend at the bottom of the table for an explanation of the color coding of projects.

Appendix B – VUEWorks CMMS Summary of SSOs and Sewer Collection Summary

SSO Releases Reported to EPA
CY 2016
Springfield, MA

Date Discovered	Location	Point X	Point Y	Latitude	Longitude	Overflow Volume	Discharge Location	Action to Prevent	SSO Cause
02/26/16	1601 State Street - Inside Saint Michaels Cemetery	373750.0282	2868128.24	42.11356414	-72.54090095	< 10,000 Gallons	Watershops Pond	Repair Sewer Main	Pipe Collapse
03/28/16	274 Newhouse Street - Springfield	380934.1337	2858338.2	42.08693787	-72.51399616	<10,000 Gallons	Basement	Jetted Main	Sewer System Blockage
04/07/16	2465 Roosevelt Avenue - Springfield	369778.017	2879490.207	42.14460701	-72.55605753	<10,000 Gallons	Basement	Repair Sewer Main	Pipe Collapse
04/17/16	11 & 20 Laurence Road - Springfield	364063.4439	2874194.911	42.12988088	-72.57688126	<10,000 Gallons	Basement	Jetted Main	Sewer System Blockage
04/19/16	64 West Allen Ridge Road - Springfield	376711.6657	2859328.135	42.08951544	-72.52959485	<10,000 Gallons	Basement	Jetted Main	Root Intrusion in Mainline
05/24/16	332 Dorset Street	374966.1416	2856728.48	42.08232402	-72.53590892	<10,000 Gallons	Basement	Jetted Main	Grease Blockage
05/25/16	Tiffant Street Pump Station	371565.9376	2854361.678	42.07571554	-72.54832645	<10,000 Gallons	Pecousic Brook	Replace Blown Fuses	Pump Station Failure
06/09/16	Union Street Between East Columbus Ave and Main Street	361360.5136	2862416.792	42.09746815	-72.58629195	<10,000 Gallons	Connecticut River	Jetted Main	Sewer System Blockage
08/02/16	Mill St at Manhole F68	363657.5923	2859741.977	42.09020851	-72.57770414	<10,000 Gallons	Connecticut River	Secured Manhole Cover	Insufficient System Capacity During Rain Event
08/10/16	363 -365 Worthington Street - Springfield	360361.4617	2865451.212	42.10575951	-72.59011572	<10,000 Gallons	Basement	Not Applicable	Insufficient System Capacity During Rain Event
08/16/16	149 Walnut Street - Springfield	365418.0892	2865014.56	42.10473717	-72.57146256	<10,000 Gallons	Basement	Not Applicable	Insufficient System Capacity During Rain Event
09/19/16	1323 Worcester Street - Indian Orchard	385101.8742	2884152.039	42.15790566	-72.49975768	<10,000 Gallons	Basement	Not Applicable	Insufficient System Capacity During Rain Event
09/19/16	149 Walnut Street - Springfield	365418.0892	2865014.56	42.10473717	-72.57146256	<10,000 Gallons	Basement	Not Applicable	Insufficient System Capacity During Rain Event
09/19/16	136 Myrtle Street - Indian Orchard	383126.2435	2883341.478	42.15561773	-72.50700834	<10,000 Gallons	Basement	Not Applicable	Insufficient System Capacity During Rain Event
09/19/16	8 Fort Street - Springfield	359364.1495	2864675.715	42.10359654	-72.59375401	<10,000 Gallons	Basement	Not Applicable	Insufficient System Capacity During Rain Event
09/19/16	105 Ingersoll Grove - Springfield	363843.5477	2869344.657	42.11656438	-72.57746598	<10,000 Gallons	Basement	Not Applicable	Insufficient System Capacity During Rain Event
09/19/16	1326 Worchester Street - Indian Orchard	385135.1422	2884415.504	42.15862967	-72.49964637	<10,000 Gallons	Basement	Not Applicable	Insufficient System Capacity During Rain Event
09/21/16	126 Governor Street - Springfield	361361.186	2872653.091	42.12555615	-72.58677003	<10,000 Gallons	Basement	Not Applicable	Insufficient System Capacity During Rain Event
09/21/16	563 Union Street - Springfield	365568.5695	2866056.755	42.10760211	-72.57095629	<10,000 Gallons	Basement	Not Applicable	Insufficient System Capacity During Rain Event
10/22/16	14 Pomona Street	369698.9441	2859202.235	42.08893477	-72.55542343	<10,000 Gallons	Basement	Jetted Main on Later Date	Grease Blockage
11/24/16	Dennis Street at Packard Avenue	377943.4043	2862151.429	42.09730324	-72.52518222	<10,000 Gallons	Ground Surface	Jetted Main	Sewer System Blockage
12/31/16	136 Talmadge Street	380949.9406	2858429.569	42.0871891	-72.51394193	<10,000 Gallons	Basement	Cleaned and Chemically Treated	Grease Blockage in Mainline

Sewer Collection Work Summary

End Date Range:
1/1/2016 - 12/31/2016

Sewer Backup Work Orders:	647	
Advised Customer:	433	
Petitions:	212	
Complaints & Investigations:	139	
Work Orders w/ Rodding:	288	
Work Orders w/ Standing Main:	32	
Haz-Mat Calls:	0	
SSOs:	21	
Syphon Inspection Work Orders:	260	
Total Blocked Syphons:		0
Sanitary Repairs:	40	
Sanitary Repair Pipe Installed (ft):		1,829
House Connection Repairs:	100	
House Connection Repair Pipe Installed (ft):		1,786
Cave-Ins:	86	
Patching / Restoration / Loam & Seed:	120	
Sewer Jetted (ft):	942,322	
Manholes Cleaned:	3,466	
Easement Maintenance Work Orders:	62	

Sewer Back Up Work Orders is the total WOs with an Activity Description of 'Sewer Back Up'

Advised Customers is the total WOs with the 'Advised Customer' box checked.

Petitions is the total WOs with the 'Petition #' box filled in.

Complaints & Investigation Work Orders is the total WOs with an Activity Description of 'Investigations, Odors & Manhole Covers' or 'Complaints & Investigations'.

Work Orders w/ Rodding is the total WOs with the 'Rodded' box checked.

Work Orders w/ Standing Main is the total WOs with the 'Standing Main' or 'Standing Main Cleared' box checked.

Haz-Mat Calls is the total WOs with an Activity Description of 'HAZMAT Spill'.

SSOs is the total WOs with the 'SSO' box checked. After 1/1/2016 it counts all SSO Work Orders instead.

Siphon Inspection Work Orders is the total WOs with an Activity Description of 'Siphon Inspection'.

Sanitary Repairs is the total WOs with an Activity Description of 'Sewer Main Repair/Replace'.

House Connection Repairs is the total WOs with an Activity Description of 'Sewer Connection Repair'.

Cave-Ins are the total WOs with an Activity Description of 'Sewer Related Cave In' or with the 'Cave In' box checked

Patching/Restoration/Loam & Seed are the total WOs with an Activity Description of 'Patching & Restoration'.

Sewer Jetted (ft) is the total feet entered in the 'Sewer Jetted' field.

Manholes Cleaned is the total manhole assets written to 'Sewer Jetting & Manhole Cleaning' or 'Check & Wash Manhole' and includes amount entered into the 'Manholes Cleaned' box.

Easement Maintenance Work Orders is the total WOs with an Activity Description of 'Cross Country Sewer Easement Maintenance'

Appendix C – Three Year Capital Improvement Program

Three Year Capital Improvement Program for Fiscal Years 2016 - 2018
Including One Year Capital Program Budget for Fiscal Year 2016

As approved by the Commission on Thursday June 18, 2015

WATER SUPPLY & TRANSMISSION

			2016 CAPITAL PROGRAM BUDGET	2017 - 2018 CAPITAL PROGRAM	
PROJECT ID	PROJECT NAME	SOURCE OF FUNDS	FY 2016	FY 2017	FY 2018
004-0007	Dam Maintenance/Various Locations	Revenues/Reserves	$170,000	$150,000	$90,000
004-0019	Watershed Roads	Revenues/Reserves	$0	$25,000	$125,000
004-0026	Intake Dam Rehabilitation	Bond	$400,000	$2,000,000	$0
005-0026	Treatment System Assessment & Design	Revenues/Reserves	$0	$100,000	$100,000
005-0027	Water Treatment System Improvements	Revenues/Reserves	$820,000	$350,000	$350,000
005-0033	West Parish Filters Road & Drainage Improvements	Revenues/Reserves	$0	$125,000	$0
005-0042	Treatment System Facilities Improvement Phase I	Bond	$500,000	$1,300,000	$10,300,000
06A-0008	Transmission System Assessment & Design	Revenues/Reserves	$0	$100,000	$200,000
06A-0014	Transmission System Rehabilitation	Revenues/Reserves	$100,000	$100,000	$100,000
06A-0019	Huntington Pump Station Electrical Upgrade	Revenues/Reserves	$75,000	$0	$0
06A-0033	Transmission System Vegetation Removal	Revenues/Reserves	$300,000	$300,000	$300,000
080-0013	Provin MT Water Storage System Rehabilitation	Revenues/Reserves	$0	$250,000	$1,000,000
Summary for WATER SUPPLY & TRANSMISSION (12 detail records)		**Activity Sum**	**$2,365,000**	**$4,800,000**	**$12,565,000**
		Percent of Total	**13.00%**	**21.73%**	**15.61%**

WATER DISTRIBUTION

PROJECT ID	PROJECT NAME	SOURCE OF FUNDS	2016 CAPITAL PROGRAM BUDGET FY 2016	2017 - 2018 CAPITAL PROGRAM FY 2017	FY 2018
070-0006	Meter Replacement	Revenues/Reserves	$1,000,000	$1,000,000	$1,250,000
12B-0005	Distribution System Rehabilitation	Revenues/Reserves	$100,000	$500,000	$500,000
12B-0036	Hydrant Replacement Program	Revenues/Reserves	$150,000	$300,000	$100,000
12B-0040	Distribution System Assessment & Design	Revenues/Reserves	$0	$250,000	$250,000
12B-0041	Distribution System Main Replacement	Bond	$1,300,000	$1,300,000	$1,300,000
12B-0070	Central & Hickory Water Main Replacement	Bond	$1,455,000	$455,000	$0
12B-0071	Structural Lining Culverts & Bridges Project	Revenues/Reserves	$665,000	$0	$0
Summary for WATER DISTRIBUTION (7 detail records)		**Activity Sum**	**$4,670,000**	**$3,805,000**	**$3,400,000**
		Percent of Total	**25.68%**	**17.23%**	**4.22%**

WASTEWATER COLLECTION

PROJECT ID	PROJECT NAME	SOURCE OF FUNDS	2016 CAPITAL PROGRAM BUDGET FY 2016	2017 - 2018 CAPITAL PROGRAM FY 2017	FY 2018
002-0009	Pump Station Improvements	Revenues/Reserves	$100,000	$240,000	$240,000
003-0014	Flood Control Pump Station Improvements	Revenues/Reserves	$100,000	$150,000	$0
003-0028	CSO Phase II-York St Station & River Cross Design	Bond	$2,000,000	$3,000,000	$0
003-0029	CSO Phase II York St / River Crossing-Construction	SRF	$0	$0	$55,000,000
12A-0018	Collection System Design	Revenues/Reserves	$300,000	$500,000	$500,000
12A-0024	Phase II Collection System Asset Management-Rev	Revenues/Reserves	$2,750,000	$650,000	$350,000
12A-0039	Collection System Rehab/Replacement	Revenues/Reserves	$0	$362,000	$350,000
12A-0041	Sewer Rehabilitation -	Bond	$3,100,000	$2,750,000	$3,500,000
12A-0068	Easement Clearing	Revenues/Reserves	$350,000	$350,000	$250,000

12A-0069	IPP & FOG Software	Revenues/Reserves	$178,500	$0	$0
Summary for WASTEWATER COLLECTION (10 detail records)		**Activity Sum**	**$8,878,500**	**$8,002,000**	**$60,190,000**
		Percent of Total	**48.81%**	**36.23%**	**74.76%**

WASTEWATER TREATMENT

PROJECT ID	PROJECT NAME	SOURCE OF FUNDS	2016 CAPITAL PROGRAM BUDGET FY 2016	2017 - 2018 CAPITAL PROGRAM FY 2017	FY 2018
001-0007	Wastewater Treatment Improvements	Revenues/Reserves	$75,000	$320,000	$500,000
001-0009	Wastewater Treatment O&M Evaluation	Revenues/Reserves	$0	$0	$500,000
001-0010	SRWTF Electrical Distribution Upgrade	Bond	$500,000	$1,000,000	$2,000,000
Summary for WASTEWATER TREATMENT (3 detail records)		**Activity Sum**	**$575,000**	**$1,320,000**	**$3,000,000**
		Percent of Total	**3.16%**	**5.98%**	**3.73%**

POWER SUPPLY

PROJECT ID	PROJECT NAME	SOURCE OF FUNDS	2016 CAPITAL PROGRAM BUDGET FY 2016	2017 - 2018 CAPITAL PROGRAM FY 2017	FY 2018
130-0001	Power Supply Equipment Replacement	Revenues/Reserves	$500,000	$700,000	$200,000
130-0002	Unit 1 Hydro-Generator Overhaul	Revenues/Reserves	$0	$1,000,000	$0
130-0003	Overhaul of Hydro-Generator Unit 3	Revenues/Reserves	$0	$1,000,000	$0
Summary for POWER SUPPLY (3 detail records)		**Activity Sum**	**$500,000**	**$2,700,000**	**$200,000**
		Percent of Total	**2.75%**	**12.22%**	**0.25%**

ADMINISTRATION & ENGINEERING

PROJECT ID	PROJECT NAME	SOURCE OF FUNDS	2016 CAPITAL PROGRAM BUDGET FY 2016	2017 - 2018 CAPITAL PROGRAM FY 2017	FY 2018
090-0005	Commission Vehicles	Revenues/Reserves	$940,000	$1,000,000	$800,000

090-0007	Communications Equipment	Revenues/Reserves	$60,000	$60,000	$60,000
090-0009	Computers, Servers, Copiers	Revenues/Reserves	$100,000	$100,000	$100,000
090-0010	Building & Structure Improvements	Revenues/Reserves	$0	$100,000	$100,000
090-0011	Operating Equipment	Revenues/Reserves	$0	$100,000	$100,000
090-0015	SCADA System	Revenues/Reserves	$100,000	$100,000	$0
Summary for ADMINISTRATION & ENGINEERING (6 detail records)		**Activity Sum**	**$1,200,000**	**$1,460,000**	**$1,160,000**
		Percent of Total	**6.60%**	**6.61%**	**1.44%**

	FY 2016	FY 2017	FY 2018
Revenue/Reserves	**$8,933,500**	**$10,282,000**	**$8,415,000**
Bond*	**$9,255,000**	**$11,805,000**	**$72,100,000**
Grand Total	**$18,188,500**	**$22,087,000**	**$80,515,000**

*** Includes SRF funding source**

Three Year Capital Improvement Program for Fiscal Years 2017 - 2019
Including One Year Capital Program Budget for Fiscal Year 2017

As approved by the Commission on Thursday June 16, 2016

WATER SUPPLY & TRANSMISSION

PROJECT ID	PROJECT NAME	SOURCE OF FUNDS	2017 CAPITAL PROGRAM BUDGET FY 2017	2018 - 2019 CAPITAL PROGRAM FY 2018	FY 2019
004-0007	Dam Maintenance/Various Locations	Revenues/Reserves	$175,000	$300,000	$100,000
004-0019	Watershed Roads	Revenues/Reserves	$0	$200,000	$200,000
004-0026	Intake Dam Rehab - Design	Revenues/Reserves	$250,000	$0	$0
004-0027	Intake Dam Rehab - Construction	Bond	$0	$0	$3,000,000
005-0027	Water Treatment System Improvements	Revenues/Reserves	$525,000	$150,000	$200,000
005-0042	Treatment System Facilities Improvement Phase I	Bond	$750,000	$750,000	$0
005-0043	42" Raw Water Conduit Rehab - Design	Revenues/Reserves	$250,000	$0	$0
005-0044	42" Raw Water Conduit Rehab - Construction	Bond	$0	$3,250,000	$0
005-0046	RSF Influent & Clear Well	SRF	$0	$0	$8,000,000
06A-0008	Transmission System Assessment & Design	Revenues/Reserves	$150,000	$200,000	$200,000
06A-0014	Transmission System Rehabilitation	Revenues/Reserves	$200,000	$200,000	$200,000
06A-0033	Transmission System Vegetation Removal	Revenues/Reserves	$250,000	$150,000	$300,000
080-0013	Provin MT Water Storage System Rehabilitation	Revenues/Reserves	$0	$100,000	$0
Summary for WATER SUPPLY & TRANSMISSION (13 detail records)		**Activity Sum**	**$2,550,000**	**$5,300,000**	**$12,200,000**
		Percent of Total	**16.56%**	**24.24%**	**21.09%**

WATER DISTRIBUTION

PROJECT ID	PROJECT NAME	SOURCE OF FUNDS	2017 CAPITAL PROGRAM BUDGET FY 2017	2018 - 2019 CAPITAL PROGRAM FY 2018	FY 2019
070-0006	Meter Replacement	Revenues/Reserves	$800,000	$900,000	$1,000,000
12B-0005	Distribution System Rehabilitation	Revenues/Reserves	$300,000	$500,000	$500,000
12B-0036	Hydrant Replacement Program	Revenues/Reserves	$250,000	$250,000	$250,000
12B-0040	Distribution System Assessment & Design	Revenues/Reserves	$0	$150,000	$150,000
12B-0041	Distribution System Main Replacement	Bond	$1,300,000	$1,400,000	$500,000
12B-0070	Central & Hickory Water Main Replacement	Bond	$450,000	$0	$0
Summary for WATER DISTRIBUTION (6 detail records)		**Activity Sum**	**$3,100,000**	**$3,200,000**	**$2,400,000**
		Percent of Total	**20.14%**	**14.63%**	**4.15%**

WASTEWATER COLLECTION

PROJECT ID	PROJECT NAME	SOURCE OF FUNDS	2017 CAPITAL PROGRAM BUDGET FY 2017	2018 - 2019 CAPITAL PROGRAM FY 2018	FY 2019
002-0009	Pump Station Improvements	Revenues/Reserves	$0	$100,000	$100,000
003-0014	Flood Control Pump Station Improvements	Revenues/Reserves	$0	$0	$250,000
003-0028	CSO Phase II-York St Station & River Cross Design	Bond	$500,000	$3,500,000	$0
003-0029	Connecticut River Crossing	SRF	$0	$0	$27,055,000
003-0033	CSO Control Throttles	Revenues/Reserves	$0	$775,000	$2,324,000
003-0035	River Crossing & Throttles R.E.	Revenues/Reserves	$0	$334,000	$1,500,000
003-0037	Influent Structure	SRF	$0	$0	$2,653,000
12A-0018	Collection System Design	Revenues/Reserves	$300,000	$350,000	$350,000
12A-0024	Phase II Collection System Asset Management-Rev	Revenues/Reserves	$2,450,000	$500,000	$650,000
12A-0039	Collection System Rehab/Replacement	Revenues/Reserves	$0	$150,000	$350,000

12A-0041	Sewer Rehabilitation -	Bond	$2,750,000	$3,500,000	$1,000,000
12A-0068	Easement Clearing	Revenues/Reserves	$350,000	$250,000	$0
Summary for WASTEWATER COLLECTION (12 detail records)		**Activity Sum**	**$6,350,000**	**$9,459,000**	**$36,232,000**
		Percent of Total	**41.25%**	**43.25%**	**62.65%**

WASTEWATER TREATMENT

			2017 CAPITAL PROGRAM BUDGET	2018 - 2019 CAPITAL PROGRAM	
PROJECT ID	**PROJECT NAME**	**SOURCE OF FUNDS**	**FY 2017**	**FY 2018**	**FY 2019**
001-0007	Wastewater Treatment Improvements	Revenues/Reserves	$320,000	$200,000	$0
001-0009	Wastewater Treatment O&M Evaluation	Revenues/Reserves	$250,000	$500,000	$500,000
001-0010	SRWTF Electrical Distribution Upgrade	Bond	$600,000	$0	$0
Summary for WASTEWATER TREATMENT (3 detail records)		**Activity Sum**	**$1,170,000**	**$700,000**	**$500,000**
		Percent of Total	**7.60%**	**3.20%**	**0.86%**

POWER SUPPLY

			2017 CAPITAL PROGRAM BUDGET	2018 - 2019 CAPITAL PROGRAM	
PROJECT ID	**PROJECT NAME**	**SOURCE OF FUNDS**	**FY 2017**	**FY 2018**	**FY 2019**
130-0001	Power Supply Equipment Replacement	Revenues/Reserves	$500,000	$1,750,000	$200,000
130-0002	Unit 2 Hydro-Generator Overhaul	Bond	$0	$500,000	$4,750,000
Summary for POWER SUPPLY (2 detail records)		**Activity Sum**	**$500,000**	**$2,250,000**	**$4,950,000**
		Percent of Total	**3.25%**	**10.29%**	**8.56%**

ADMINISTRATION & ENGINEERING

			2017 CAPITAL PROGRAM BUDGET	2018 - 2019 CAPITAL PROGRAM	
PROJECT ID	**PROJECT NAME**	**SOURCE OF FUNDS**	**FY 2017**	**FY 2018**	**FY 2019**
090-0005	Commission Vehicles	Revenues/Reserves	$610,000	$150,000	$500,000

090-0007	Communications Equipment	Revenues/Reserves	$70,000	$70,000	$40,000
090-0009	Computers, Servers, Copiers	Revenues/Reserves	$250,000	$250,000	$250,000
090-0010	Building & Structure Improvements	Revenues/Reserves	$160,000	$150,000	$150,000
090-0011	Operating Equipment	Revenues/Reserves	$465,000	$225,000	$500,000
090-0015	SCADA System	Revenues/Reserves	$0	$50,000	$50,000
090-0016	Information Systems	Revenues/Reserves	$45,000	$65,000	$65,000
090-0020	Utility Cost of Service	Revenues/Reserves	$125,000	$0	$0
Summary for ADMINISTRATION & ENGINEERING (8 detail records)		**Activity Sum**	**$1,725,000**	**$960,000**	**$1,555,000**
		Percent of Total	**11.20%**	**4.39%**	**2.69%**

	FY 2017	FY 2018	FY 2019
Revenue/Reserves	**$9,045,000**	**$8,969,000**	**$10,879,000**
Bond*	**$6,350,000**	**$12,900,000**	**$46,958,000**
Grand Total	**$15,395,000**	**$21,869,000**	**$57,837,000**

*** Includes SRF funding source**

Appendix D – SWSC Operating Budget for FY 2017

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
425-010 - General Administration	***1,860,080***	***1,698,639***	***2,050,404***	***796,310***	***1,855,558***	
5101 Per Serv- Reg	684,651	746,357	595,950	336,822	587,710	
5171 Med Tax	4,698	5,229	8,820	3,161	10,020	
5174 Retirement	216,074	217,700	189,270	189,270	182,250	
5175 Insurance	116,894	114,546	114,150	73,931	114,100	
5177 Worker's Comp	32,410	26,531	19,600	16,713	18,800	
5178 Unemployment	-1,306	8,041	2,496	60	2,386	
5241 Rep & Maint-vehicle	1,389	504	1,500	2,235	1,500	Repair & Maint two Vehicles
5243 Communications Equip	0	588	0	0	0	
5246 Office Equip	0	390	900	0	900	
5249 Rep & Maint-misc	0	140	500	0	500	
5271 Rent & Lease Equip	7,550	5,031	10,000	1,044	10,000	leases on copiers/postage machine etc
5302 Acct'g & Auditing	44,000	43,000	45,000	43,000	45,000	Yearly audit
5304 Conferences & Seminars	27,242	12,297	20,000	6,530	20,000	Commission Wide Conferences,Exams & Seminars
5305 Data Processing	31,900	38,454	32,000	16,053	32,000	$18,800 Payroll & $13,200 HR Service
5307 Employee Training	2,373	7,319	10,000	70	10,000	NEWA Trng and admin staff
5309 Legal	120,662	136,595	220,000	90,944	220,000	General Council $80k, Labor Relations $20k, Damages, $50k,construction $50k,SRF financing $20k
5310 Security Services	0	714	0	0	0	
5311 Medical & Dental	4,784	6,444	10,000	6,518	10,000	$5000 Physicals new hires & $5000 CDL mandated drug and alcohol testing.
5312 Printing / Binding	1,235	1,525	3,000	2,397	3,000	Bids,various other forms, letter head etc
5313 Bank Charges	127,055	1,750	4,000	12,000	15,000	Decreased CC charges see 060-5383

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5317 Mgmnt Service	33,457	45,550	58,500	31,100	88,500	$51k Consultants etc, $29k Emergency Call Service $8,500 OPEB Study
5341 Postage	12,496	782	1,000	790	1,000	Bids,various other forms, letter head etc
5343 Advertising	10,346	13,512	13,000	15,313	18,000	Legal Notices
5347 Public Information	1,511	2,291	7,000	0	2,600	Water quality reports & emergency publications
5383 Purchased Services	42,217	21,464	50,000	17,092	50,000	Temps,Consultants, Cafateria Plan Admin, Memorial Contributions etc
5422 Office Supplies	9,632	8,895	13,000	5,578	10,000	Misc. office supplies
5439 Misc.Building,Equp/Maint Suppl	0	8	0	0	0	
5484 Vehicular Fuel	1,026	693	1,500	57	1,000	
5506 Medical - Disposable	0	0	100	0	100	Medical supplies, first aid
5514 Subscriptions	24,951	25,598	25,000	75	25,000	Water Research Foundation Subscription
5515 Manuals	244	0	0	0	0	
5516 Classroom	38,502	52,005	55,500	19,632	55,500	World is Our Classroom
5517 Misc	0	20	0	0	4,500	Water Week activities-Water Bottles, Magnets
5585 Misc. Other Supplies	9	58	0	0	0	
5711 Travel In State	2,938	1,219	3,200	245	3,200	Parking,tolls etc Commission wide
5712 Subsis In State	8,529	8,793	14,000	4,120	10,000	Commission Wide: meals, lodging, in house employee training etc
5721 Travel Out Of State	1,513	867	10,000	2,144	10,000	Commission wide
5722 Subsis Out Of State	9,862	3,925	15,000	3,926	15,000	Meals,lodging etc Commission wide
5731 Dues & Membership	42,736	55,169	60,000	28,466	60,000	Various organizations Commission Wide
5741 Insurance Premiums	0	3,060	2,000	364	1,907	Auto Ins on two vehicles
5751 Loss on Sale of Assets	16,687	0	0	0	0	
5753 Inventory Write-Off	6,494	6,367	10,000	2,990	10,000	Inventory adjustments
5762 Damages Persons/property	25,040	38,859	40,000	7,218	40,000	Potential Claims

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object		Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5763	Damages/vehicle	18,007	14,797	30,000	1,700	30,000	Potential Claims
5854	Furniture & Fixtures	1,583	8,316	1,500	0	1,500	
5916	Bond Premium Amortization	-145,248	-145,248	0	-145,248	0	
5920	Depreciation	275,941	158,484	352,918	0	134,585	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
425-020 - Information Systems	***871,055***	***917,882***	***1,084,931***	***533,909***	***1,404,304***	
5101 Per Serv- Reg	327,572	340,847	389,850	174,475	466,710	
5171 Med Tax	3,321	3,476	5,770	2,078	7,960	
5174 Retirement	97,680	101,150	123,820	123,820	144,730	
5175 Insurance	52,834	52,978	74,610	47,833	90,610	
5177 Worker's Comp	0	0	12,830	0	14,930	
5178 Unemployment	298	4,047	1,710	35	1,990	
5241 Rep & Maint vehicle	1,163	1,048	2,500	865	2,000	jk
5243 Communications Equip	920	117	0	0	0	See CIP 626-000-090-0007
5249 Repairs&maintenance	2,152	5,105	5,000	7,083	6,000	Canary systems Cobble mountian yearly walkthrough and calibration/repair of instrumentation - $3,250, Repairs to printers as needed - $2,750
5304 Training & Seminars	0	80	20,000	1,200	20,000	Microsoft, VMWare, Cisco training and certification for IT personnel
5305 Data Processing	222,635	159,701	191,523	82,745	195,000	VUEWorks, Springbrook, Dell, VMWare, VEEAM, Solrawinds, GIS, Genetec, etc software yearly maintenance support agreements
5317 Mgmnt Service	0	0	0	0	41,000	
5348 Mobile Communication	0	0	87,000	25,786	66,000	Verizon cellphones and Mobile hotspots for year
5349 Internet/WAN Communication	0	0	22,000	15,137	18,000	Internet connection at Bondis, Ludlow, Borden, and new secondary cabble internet at JJSOC and Bondis
5383 Purchased Services	440	299	2,000	8,509	1,000	Network/hardware/software engineer consulting services to assist with various assessment and config of Commission network.
5422 Office Supplies	21,633	27,650	18,000	15,003	24,000	
5484 Vehicular Fuel	949	865	1,000	87	1,000	jk

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5512 Software	14,300	37,570	14,000	0	0	Placeholder for various software. Could be put in Information Systems CIP.
5584 Safety Items	0	21,744	30,000	27,301	0	To be used to replace aging security systems at all Commission locations. Could possible be put into a CIP
5855 Computers	0	71	0	0	0	See CIP 626-000-090-0009
5860 Op Equip	0	0	0	0	50,000	
5861 Add'l Equip/Other	655	1,951	2,000	1,952	5,000	Tools, organization racks, hardware, cellphone cases
5920 Depreciation	124,503	159,183	81,318	0	248,374	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
425-030 - Operations Center	***616,359***	***700,535***	***833,454***	***177,755***	***894,155***	
5177 Worker's Comp	0	1,384	0	0	0	
5212 Electric	51,803	42,545	55,000	35,805	47,174	
5213 Natural Gas	20,059	17,319	15,600	2,359	18,689	
5241 Rep & Maint vehicle	0	0	0	-51	0	
5243 Communications Equip	986	45	0	0	0	
5245 Build/grounds	9,745	23,608	40,000	4,925	30,000	YTD exp'd $15000. Building repairs. IT Server room buildout.
5249 Rep & Maint-misc	7,272	6,353	8,000	975	6,000	Gate and fence repairs. Parking lot crack sealing.
5291 Waste Management	6,517	6,523	7,000	3,631	7,000	Level fund. $5000 spent to date.
5308 Exterminator	1,089	998	1,500	544	1,200	
5310 Security Services	88,787	83,991	90,000	45,956	85,000	$53,000 YTD
5315 Tests / Inspec	3,511	5,650	4,000	1,607	3,000	$1600 YTD. Elevator Testing, Fire Extinguishers, Fuel system Testing etc
5318 Janitoral Services	17,724	17,008	18,000	8,990	17,000	$10,270 YTD
5341 Postage	0	0	0	25	0	
5342 Telephone	527	492	526	87	1,000	(Colton) backup copper phone lines and fax machines lines
5345 Message Services	10,152	10,327	12,000	3,975	10,000	Answering Service
5383 Purchased Services	3,709	12,696	5,000	2,771	2,500	Welding service, Sign installations, etc. Purchase and installation of storage containers.
5422 Office Supplies	67	12	0	0	0	
5432 Electrical	100	490	5,000	125	500	Electrical Parts
5433 Plumbing	586	138	1,000	548	500	Plumbing supplies
5436 Lumber/wood	286	0	500	346	500	For small repairs.
5437 Paint & Materials	693	55	500	73	500	Office Painting supplies.
5439 Misc.Building,Equp/Maint Suppl	1,546	2,630	1,500	1,003	1,500	Misc. building items- padlocks, keys, Yard cleaning equipment

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object		Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5451	Cleaning Supplies	0	0	0	126	0	
5454	Custodial Supplies	5,222	4,274	4,000	1,782	4,000	Soaps, paper, tissue etc.
5481	Vehicular Parts Etc	2	0	0	0	0	
5584	Safety Items	7	856	0	0	0	
5692	Fees & Permits	666	450	500	266	500	Dumpsters, Elevator, Fuel storage permits
5741	Insurance Premiums	1,586	1,499	1,530	0	1,460	
5854	Furniture & Fixtures	870	459	1,600	0	300	$1599 YTD.
5856	Small Tools	0	72	0		0	
5910	Long Term Debt/Principal	0	2,222	178,350	0	182,350	
5915	Long Term Debt/Interest	163,960	122,114	120,597	61,887	113,682	
5920	Depreciation	218,886	336,328	261,751	0	359,800	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object		Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
425-032 - Bondi Administration Facilit		***202,622***	***268,223***	***286,428***	***96,581***	***251,226***	
5213	Natural Gas	7,001	7,063	7,000	274	7,032	
5245	Rep & Maint/building&grounds	3,210	1,556	6,000	4,436	6,000	HVAC & repair services
5249	Rep & Maint-Misc	661	288	2,000	0	2,000	
5318	Janitorial Services	17,366	16,864	21,000	8,352	20,000	Contract Services
5342	Telephone	126,955	169,553	81,000	54,718	52,000	(Bondis) Comcast site to site ENS $35,000 per year, Comcast PRI @ Colton $6,000 per year, Verizon PRI $7,200 per year, Verizon backup copper phone lines and fax lines @ $3,600
5383	Purchased Services	4,408	7,560	12,000	519	8,000	Carpet Replacement
5432	Electrical	134	280	2,500	31	2,500	
5437	Paint & Materials	0	860	500	0	500	
5439	Misc.Building,Equp/Maint Suppl	544	1,007	2,000	1,150	2,000	
5454	Custodial Supplies	4,167	3,918	6,500	2,407	6,500	
5533	Service Line Materials	0	3	200	20	200	
5741	Insurance Premiums	12,224	11,558	11,798	0	11,252	
5854	Furniture & Fixtures	4,081	193	5,000	3,584	5,000	
5861	Add'l Equip/Other	0	7,969	5,000	3,193	5,000	
5910	Long Term Debt/Principal	0	1,134	91,000	0	95,200	
5915	Long Term Debt/Interest	18,736	35,284	30,821	16,548	26,166	
5917	Series A 2007 Unamoritized Ref	1,350	1,350	0	1,350	0	
5920	Depreciation	1,785	1,785	2,109	0	1,876	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
425-050 - General Accounting	***460,878***	***422,086***	***453,500***	***282,206***	***483,030***	
5101 Per Serv- Reg	323,686	286,013	290,500	153,378	310,110	
5171 Med Tax	1,963	1,400	4,300	749	5,290	
5174 Retirement	87,570	85,880	92,260	92,260	96,170	
5175 Insurance	47,330	45,384	55,600	35,819	60,210	
5177 Worker's Comp	0	0	9,560	0	9,920	
5178 Unemployment	329	3,410	1,280	0	1,330	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
425-060 - Customer Service	***822,031***	***1,000,490***	***956,650***	***639,901***	***1,087,650***	
5101 Per Serv- Reg	402,989	404,111	409,030	216,748	438,280	
5171 Med Tax	3,919	12,204	6,050	2,410	7,480	
5174 Retirement	122,320	125,610	129,910	129,910	135,910	
5175 Insurance	66,262	65,931	78,280	50,471	85,090	
5177 Worker's Comp	0	0	13,460	0	14,020	
5178 Unemployment	461	5,097	1,800	17	1,870	
5243 Communications Equip	0	-10	0	0	0	Budget resides with IT-Request printer for Finance Director
5312 Printing / Binding	31,493	29,496	32,000	13,569	32,000	Demand notices/Monthly Billing
5341 Postage	189,023	191,053	185,000	128,646	190,000	Changes in AP process could lower line item from project FY 16 expn of $256K
5383 Purchased Services	422	158,622	93,120	94,932	175,000	Ebill not live Increase use of Unibank, which expanded to all major CC
5422 Office Supplies	5,141	8,376	8,000	3,151	8,000	Projected FY 16 6,300 could reduce?
5711 Travel In State	0	0	0	47	0	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
425-070 - Asset Management	***0***	***0***	***0***	***0***	***462,790***	
5101 Per Serv- Reg	0	0	0	0	260,310	
5171 Med Tax	0	0	0	0	4,440	
5174 Retirement	0	0	0	0	78,860	
5175 Insurance	0	0	0	0	50,540	
5177 Worker's Comp	0	0	0	0	8,330	
5178 Unemployment	0	0	0	0	1,110	
5241 Rep & Maint vehicle	0	0	0	0	1,000	Maintenanace of department vehicle
5246 Office Equip	0	0	0	0	100	
5247 Operating Equip	0	0	0	0	5,000	Mobile device testing,
5306 Engineering & Arch	0	0	0	0	50,000	Asset Management programatic support, integrations, etc.
5422 Office Supplies	0	0	0	0	100	
5481 Vehicular Parts Etc	0	0	0	0	2,000	Fleet Diagnostic equipmen.
5484 Vehicular Fuel	0	0	0	0	1,000	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object		Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
430-100 - Engineering		***2,337,794***	***2,418,664***	***2,692,427***	***1,546,341***	***2,557,214***	
5101	Per Serv- Reg	1,433,179	1,409,305	1,647,760	795,053	1,549,870	
5171	Med Tax	17,370	17,157	24,380	9,780	26,420	
5174	Retirement	443,930	473,440	511,440	511,440	469,510	
5175	Insurance	244,796	251,644	315,330	202,326	300,890	
5177	Worker's Comp	62,709	70,031	54,190	96	49,580	
5178	Unemployment	1,462	19,178	7,220	2,278	6,610	
5241	Rep & Maint-vehicle	25,492	25,158	0	6,800	25,000	jk
5243	Communications Equip	26	7	0	0	0	
5246	Office Equip	53	65	0	0	0	
5247	Operating Equip	19	1,163	0	0	0	
5249	Rep & Maint-misc	531	380	0	0	0	
5306	Engineering & Arch	13,610	79,990	25,000	4,027	50,000	At the discretion fo the Exec Dir may include Bond holder report, other issues outside capital and othre O&M budgets
5342	Telephone	0	220	120	180	0	(Engineering)
5383	Purchased Services	20	28	0	0	0	
5414	Diesel	4,623	2,280	0	1,913	4,000	
5422	Office Supplies	2,562	5,632	6,000	2,148	6,000	
5437	Paint & Materials	2,734	4,012	4,000	2,524	4,500	Based on FY 16 rate
5439	Misc.Building,Equp/Maint Suppl	155	328	0	163	0	
5481	Vehicular Parts Etc	73	108	0	22	0	
5484	Vehicular Fuel	22,006	18,265	29,000	6,210	15,000	
5512	Software	0	8	0	0	0	
5533	Service Line Materials	3,672	3,693	0	33	0	
5584	Safety Items	741	336	2,000	0	2,000	Standard varies year to year
5585	Misc. Other Supplies	10	0	0		0	
5722	Subsis Out Of State	0	193	0	0	0	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5856 Small Tools	2,160	1,209	2,000	1,346	2,000	Standard Varies year to year
5860 Op Equip	13,311	7,826	8,000	0	5,000	pipe locator, survey equipment varies year to year.
5920 Depreciation	42,552	27,007	55,987	0	40,834	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
440-150 - Operations Mgmt	***304,575***	***302,532***	***408,803***	***174,353***	***383,180***	
5101 Per Serv- Reg	175,531	173,052	259,350	59,690	245,360	
5171 Med Tax	0	0	3,840	190	4,190	
5174 Retirement	83,160	82,690	82,370	82,370	76,090	
5175 Insurance	44,909	43,567	49,640	32,034	47,640	
5177 Worker's Comp	0	0	8,530	0	7,850	
5178 Unemployment	125	3,195	1,140	0	1,050	
5484 Vehicular Fuel	850	28	1,000	70	1,000	
5920 Depreciation	0	0	2,933	0	0	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
440-155 - West Parish Lab	***549,838***	***534,578***	***578,398***	***374,499***	***607,265***	
5101 Per Serv- Reg	298,608	293,932	307,440	190,962	321,660	
5107 Per Serv- O.t.	3,214	1,617	0	2,042	0	
5108 Shift Diff	891	920	0	475	0	
5171 Med Tax	4,242	4,151	4,550	2,699	5,490	
5174 Retirement	82,940	86,530	89,540	89,540	91,520	
5175 Insurance	49,091	49,316	58,840	37,855	62,450	
5177 Worker's Comp	0	0	10,120	0	10,290	
5178 Unemployment	311	3,771	1,350	0	1,380	
5241 Rep & Maint-Vehicle	4,642	528	2,000	95	1,000	Decrease by $1000: newer vehicle , should be just tires/brakes
5246 Office Equipment	0	0	200	0	0	copier maintanence if needed
5247 Operating Equipment	3,515	3,109	7,000	2,629	6,000	Decrease by $1000: $3652 autoclave pm contract, $960 Alert calib/pm contract, $1388 for any other repairs or service
5315 Testing & Inspection	28,652	34,654	27,000	13,070	35,000	Increase by $8,000: see attached spreadsheet
5383 Purchased Services	2,375	0	0	431	2,500	Increase by $2500: NPDES flow monitoring, transfer from Watershed
5413 Propane & Other	67	0	0	0	0	
5422 Office Supplies	769	453	500	406	500	level fund
5481 Vehicular Parts Etc	638	0	1,000	0	500	Decrease by $500: new vehicle , just need wiper blades, filters,etc
5484 Vehicular Fuel	4,177	2,431	4,500	1,543	3,100	
5504 Lab Chemicals	31,824	25,671	30,000	6,485	28,000	Decrease by $2,000
5507 Misc Lab Supplies	21,516	18,843	20,000	17,430	20,000	level fund
5584 Safety Items	44	0	500	40	500	level fund
5854 Furniture & Fixtures	300	328	500	0	500	lab task chairs and file cabinet

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5859 Med/Lab Equipment	6,643	8,324	7,000	8,799	10,800	Increase by $ 3,800: $8612 for DR6000, $2200 small kits & meters
5920 Depreciation	5,379	0	6,358	0	6,075	

SWSC Operating Budget

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By Cost Center, and Object		Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
440-160 - Warehouse Inventory		***354,729***	***320,094***	***357,461***	***194,465***	***331,210***	
5101	Per Serv- Reg	207,298	189,997	201,910	100,086	198,520	
5107	Per Serv- O.t.	3,362	2,402	0	973	0	
5171	Med Tax	2,365	2,102	2,990	1,105	3,390	
5174	Retirement	64,900	55,520	60,090	60,090	57,740	
5175	Insurance	37,864	32,072	38,650	25,009	38,550	
5177	Worker's Comp	210	1,944	6,650	0	6,360	
5178	Unemployment	255	2,428	890	0	850	
5241	Rep & Maint/Vehicle	1,224	5,748	3,500	790	1,600	Stockroom van, forklifts,floor washer
5245	Rep & Maint/Building & Grounds	0	923	1,500	166	0	Gates,fencing,racking etc.
5312	Printing / Binding	398	339	1,500	498	800	Inv./Pur. Forms
5383	Purchased Services	533	0	1,300	0	0	Door/Gate repairs,welding
5413	Propane & Other	1,421	1,197	1,800	702	1,600	Forklitfs
5422	Office Supplies	1,647	1,951	1,700	255	1,500	Bar Code labels,tags,ribbon
5435	Hardware	45	0	200	0	100	Locks & misc. hardware
5436	Lumber / Wood	194	0	1,600	0	0	Stockroom shelving & repairs
5437	Paint & Materials	112	65	300	318	300	Stockroom paint only
5439	Misc.Building,Equp/Maint Suppl	2,087	2,923	2,800	669	2,600	Misc. stockroom supplies
5462	Pesticides/herbicides	0	0	400	0	200	Back yard & pipe area
5481	Vehicular Parts Etc	14	39	1,500	23	500	Forklift,floor washer,air comp.
5484	Vehicular Fuel	1,135	595	1,500	109	1,000	
5533	Service Line Materials	11	17	0	0	0	
5535	Main Line Materials	0	0	0	840	0	
5582	Clothes/Uniforms	18,667	9,390	10,000	965	8,900	Polo's,denims,tees,sweats
5584	Safety Items	1,617	1,335	700	108	0	Misc. safety items.
5585	Misc. Other Supplies	803	1,555	1,500	908	800	PM supplies,fittings,etc.
5854	Furniture & Fixtures	700	0	1,000	0	900	Stockroom furniture & cabinets
5856	Small Tools	2,168	2,298	3,200	854	2,500	Misc. small tools,bits,chargers

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5861 Add'l Equip/Other	1,231	5,252	5,000	0	2,500	Racks,bins,pallets, shelving
5920 Depreciation	4,468	0	5,281	0	0	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
440-170 - SERTS	***173,042***	***145,184***	***285,325***	***143,007***	***368,340***	
5101 Per Serv- Reg	0	0	0	0	49,640	
5171 Med Tax	0	0	0	0	850	
5174 Retirement	21,670	0	0	0	15,400	
5175 Insurance	11,667	1,656	0	319	9,640	
5177 Worker's Comp	0	0	0	0	1,590	
5178 Unemployment	0	0	0	0	220	
5241 Rep & Maint - Vehicle	190	1,039	2,000	367	2,000	2012 Vehicle
5307 Employee Training	62,877	49,207	85,000	38,858	75,000	Training conducted
5317 Mgmnt Service	0	0	100,000	34,377	100,000	EHS Services
5383 Purchased Services	500	750	5,000	595	2,500	Disposal of wastes (asbesto, etc).
5422 Office Supplies	1,882	94	2,000	0	2,000	Split with IPP, FOG & CCCP (New Printer)
5481 Vehicular Parts Etc	5	2	1,500	0	1,000	One vehicle
5484 Vehicular Fuel	1,705	6,451	2,500	501	1,000	
5506 Medical - Disposalble	0	362	2,000	380	2,000	First Aid Kits & AED Inspections
5584 Safety Items	65,284	74,160	80,000	66,241	100,000	Winches, Tripods & Gas Meter Monitoring
5585 Misc. Other Supplies	880	3,624	0	1,370	0	Safety Items Contingency
5860 Op Equip	0	0	0	0	3,000	
5861 Add'l Equip/Other	1,876	3,334	0	0	2,500	Monitroing Supplies
5920 Depreciation	4,505	4,505	5,325	0	0	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
450-201 - Water Supply Admin	***413,927***	***379,585***	***460,906***	***251,814***	***324,630***	
5101 Per Serv- Reg	250,352	256,412	259,910	135,888	204,300	
5171 Med Tax	2,144	2,201	3,850	1,145	3,490	
5174 Retirement	74,490	77,070	82,550	82,550	63,360	
5175 Insurance	40,286	40,333	49,750	32,034	39,670	
5177 Worker's Comp	0	0	8,550	197	6,540	
5178 Unemployment	236	3,089	1,140	0	880	
5484 Vehicular Fuel	1,872	480	2,500	0	1,000	
5920 Depreciation	44,547	0	52,656	0	5,390	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
450-210 - Watershed Mgmt	***326,581***	***294,696***	***362,340***	***178,746***	***276,083***	
5101 Per Serv- Reg	103,377	100,264	99,990	29,946	56,640	
5107 Per Serv- O.t.	437	32	0	0	0	
5171 Med Tax	1,410	1,369	1,480	418	970	
5174 Retirement	28,120	29,820	31,760	31,760	17,570	
5175 Insurance	15,190	15,597	19,140	12,309	11,000	
5177 Worker's Comp	0	9	3,290	0	1,820	
5178 Unemployment	147	1,224	440	0	250	
5241 Rep & Maint-vehicle	784	1,176	1,500	763	1,500	Level - Purchase of services - Vehicles
5245 Rep & Maint-Bldg's & Grounds	195	0	2,500	1,750	2,500	Level - Purchase of services - York House
5249 Rep & Maint-misc	0	5	500	0	0	
5292 Tree & Brush Removal	24,900	18,400	28,500	16,800	20,000	Forest management
5306 Engineering & Arch	8,850	23,949	25,000	2,450	25,000	Level - AMC boundary survey
5308 Exterminator	1,275	1,000	2,000	2,000	3,000	Increase - Nuisance animal control
5312 Printing / Binding	3,077	856	600	825	600	Level - Road gate sign phone numbers
5315 Tests / Inspec	250	0	300	0	300	Level - Soil and water testing services
5317 Mgmnt Service	4,682	0	0	0	0	Level
5341 Postage	17	18	200	0	100	Reduce - Based on usage
5382 Hired Equipment	75,357	45,910	70,000	59,939	70,000	Level - Road repair and maintenance
5383 Purchased Services	4,876	3,015	4,500	1,177	1,000	Reduce - For contingency
5413 Propane & Other	2,840	2,576	3,000	0	3,000	Level - Commodity price based
5414 Diesel	0	0	0	20	0	Level
5422 Office Supplies	607	269	400	260	400	Level
5435 Hardware	0	0	250	0	250	Level - Hand tools, shovels, staples, etc
5437 Paint & Materials	2,466	1,454	3,500	978	2,000	Reduce - Tree marking paint

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object		Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5439	Misc.Building,Equp/Maint Suppl	839	156	1,000	52	1,000	Level - Culvert pipes
5454	Custodial Supplies	9	0	0	0	0	Admin
5463	Seed	0	412	250	0	250	Level
5464	Trees, Shrubs & Plants	0	60	100	0	100	Level
5481	Vehicular Parts Etc	0	0	250	0	750	Increase - Repair or replacement parts for Tacoma
5484	Vehicular Fuel	2,964	1,959	3,300	1,072	2,100	Admin
5507	Misc Lab Supplies	0	0	200	0	0	Reduce - Based on usage
5545	Misc Public Works Supplies	9,599	13,363	15,000	12,632	15,000	Level - Gravel and stone for road work
5584	Safety Items	494	438	250	48	250	Level - First aid kit
5585	Misc. Other Supplies	101	0	650	0	250	Reduce - Spill Prevention Kits
5692	Fees & Permits	20	0	50	0	50	Level
5711	Travel In State	7	17	0	0	0	Level
5854	Furniture & Fixtures	0	264	500	0	500	Level
5860	Op Equip	0	0	750	0	0	
5910	Long Term Debt/Principal	0	50	4,000	0	4,200	Admin
5915	Long Term Debt/Interest	8,177	5,522	7,034	3,547	6,911	Admin
5920	Depreciation	25,512	25,512	30,156	0	26,822	Admin

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
450-212 - Borden Brook Reservoir	***140,748***	***161,641***	***149,440***	***82,288***	***400,097***	
5101 Per Serv- Reg	30,889	39,218	0	21,873	156,380	ADMIN
5107 Per Serv- O.t.	894	5,079	0	237	0	ADMIN
5108 Shift Diff	216	216	0	0	0	ADMIN
5171 Med Tax	464	627	0	321	2,670	ADMIN
5174 Retirement	0	0	0	0	45,480	
5175 Insurance	0	0	0	0	30,360	
5177 Worker's Comp	0	0	0	0	5,010	
5178 Unemployment	113	75	0	71	670	ADMIN
5212 Electric	5,678	7,566	5,700	14,749	6,622	J.K
5241 Rep & Maint-vehicle	7,245	11,244	12,000	5,519	12,000	1 Pickup, 2 DOT Dump trucks, 2 Atvs, 1 Boat, 1 skid steer, 1 excavator, 1 dozer, 3 Trailers
5243 Communications Equip	0	200	0	0	0	
5245 Build/grounds	7,129	8,982	20,000	11,405	15,000	Decrease 5,000 3 Garages with structural repairs needed, Main Shop new bay doors, Residence interior drywall/mold removal and repair due to roof leaks, Gate House brick repointing
5246 Rep & Maint/Office Equipment	0	51	500	0	500	Printers/Desk Tops
5247 Operating Equip	0	187	500	0	500	Lawnmower/Brush Saws
5249 Rep & Maint-misc	0	12	500	0	500	Pumps, Compressors, Equip.
5271 Rent & Lease Equip	2,962	1,849	3,000	1,390	3,000	Acetylene And Oxygen, Equip Rentals
5291 Waste Management	1,286	1,398	1,500	756	1,500	Waste pick up services
5292 Tree & Brush Removal	0	0	0	0	13,000	Tree removal behind Resident Manager House
5308 Exterminator	0	0	300	0	300	Exterminator/Pest control

SWSC Operating Budget

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By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5310 Security Services	0	0	2,000	968	3,000	Increase 1,000 for EPO services due to their protocol of 2 officers per visit. 3 visits needed for atv service.
5312 Printing / Binding	0	0	500	0	0	
5315 Tests / Inspec	80	144	350	110	350	Inspections for Fire Extinguishers, Boilers,Pressure Vessels, Vehicles/Trailers/DOT
5342 Telephone	1,201	1,052	1,314	1,821	600	(Borden)1 copper phone line at $600 per year. Currently using Comcast bundle package for phone and Internet charged to 610-425-020-5349
5382 Hired Equipment	590	838	1,000	0	1,000	Towing
5383 Purchased Services	1,935	1,647	2,500	0	2,500	Septic Pumps, 2 Furnace Cleanings and Repairs
5412 Fuel Oil	9,761	10,060	14,000	1,418	12,000	4,000 gal/yr est. 3.00 per gal. Decrease 2,000
5413 Propane & Other	66	28	2,500	53	2,000	500 Gal/1 Tank fill Decrease 500
5414 Diesel	3,106	6,781	8,000	1,523	4,000	Equipment Fuel
5422 Office Supplies	130	326	500	0	500	Garage and House Office
5431 Mechanics/engineer	930	1,603	2,000	752	2,000	Supplies,Tools, Measuring Instruments
5432 Electrical	2,443	450	1,500	0	1,500	Building Supplies for House, Garages, Gate house and Offices
5433 Plumbing	212	24	1,000	195	1,000	Pipe/valve repairs, updates
5434 Concrete Etc	1,725	728	4,000	1,755	4,000	Garage floors/Aprons, Gate installations/Trespassing post.
5435 Hardware	1,009	1,024	1,000	2,350	1,000	Nuts ,Bolts, Fasteners
5436 Lumber/wood	2,571	110	2,500	1,128	2,500	Forms, Posts, Rot repaires
5437 Paint & Materials	851	9	1,000	112	1,000	Paint Supplies for Garages, Gate house and Offices. Interior Exterior
5439 Misc.Building,Equp/Maint Suppl	610	1,853	2,000	801	2,000	Miscellaneous parts, Gear, Equip

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object		Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5454	Custodial Supplies	293	466	500	168	500	Supplies for bathroom/Break room
5462	Pesticides/herbicides	101	30	150	14	150	Bug spray, Wipes for poison ivy
5463	Seed	321	282	500	0	500	Dam/Ground repaires
5481	Vehicular Parts Etc	3,406	4,073	6,000	2,525	6,000	2 DOT vehichles, 1 pickup, 3 Excavation equipment, 3 Trailers, 2 ATVS, 1 Boat/Trailer
5484	Vehicular Fuel	4,077	3,317	4,500	1,343	2,700	Joe K
5506	Medical - Disposable	0	0	100	0	100	First Aid refills
5532	Mixes	13,100	5,836	8,000	809	8,000	Material for road repairs, Salt/Sand for winter
5545	Misc Public Work Supplies	0	2,732	4,000	3,164	4,000	Culverts, Pipes, Structures
5584	Safety Items	433	824	1,000	111	1,000	Boots/Waiters, PPE
5741	Insurance Premiums	1,293	1,232	1,258	0	1,200	
5854	Furniture & Fixtures	53	0	300	0	300	Office Furniture, Fixtures
5856	Small Tools	475	304	700	522	700	Shovels, Rakes, Hand saws
5857	Grounds'g Tools	908	970	2,000	0	2,000	Chainsaws, Brush saws, Blowers
5860	Op Equip	5,625	11,390	5,000	4,999	10,000	Increase 5,000 97" Grader Rake For Bobcat 5,000 , Vehichle Lift for shop 4,500
5861	Add'l Equip/Other	0	2,064	2,500	-672	2,500	Jack stand, Air tools, Grinders
5920	Depreciation	26,570	24,735	21,268	0	26,005	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
450-213 - Ludlow Reservoir	***665,327***	***654,430***	***795,723***	***387,538***	***720,959***	
5101 Per Serv- Reg	327,879	314,047	387,040	154,947	339,060	
5107 Per Serv- O.t.	5,214	8,455	0	9,889	0	
5108 Shift Diff	832	833	0	440	0	
5171 Med Tax	4,628	4,514	5,730	2,308	5,780	
5174 Retirement	86,780	88,800	109,230	109,230	94,720	
5175 Insurance	51,293	50,734	74,070	47,458	65,830	
5177 Worker's Comp	12,666	12,761	12,730	6,563	10,850	
5178 Unemployment	473	3,968	1,700	68	1,450	
5212 Electric	15,594	13,883	16,000	9,931	14,739	
5213 Natural Gas	7,180	7,798	7,200	1,365	7,490	
5241 Rep & Maint-vehicle	9,881	7,071	9,800	7,757	9,800	Maintance Vehicle Fleet
5243 Communications Equip	50	0	250	0	250	Rick
5244 Paving	0	850	1,000	0	1,000	Crack Seals On Dams
5245 Build/grounds	5,257	6,144	5,500	1,025	5,500	Roads, Roofs, and Gates
5246 Office Equip	82	0	250	0	250	Copiers and Fax Repairs
5247 Operating Equip	241	743	500	47	500	Small Equipment Repairs and Pumps
5249 Rep & Maint-misc	1,222	1,717	1,500	1,358	1,500	Brush Cutters and Chains Saw Repairs
5271 Rent & Lease Equip	156	156	300	156	300	Welding Gas Tanks
5291 Waste Management	4,893	4,641	6,000	3,780	7,000	Increase $1000 Dumpster, Septic and Celivis
5308 Exterminator	96	55	300	0	300	Pest Control
5310 Security Services	16,125	19,929	20,000	11,950	20,000	Security Guards
5312 Printing / Binding	18	335	1,000	607	1,000	Flyers and Signs
5315 Tests / Inspec	682	811	700	70	1,000	Increase $300 Vehicle Inspections, 4 DOT, 2 Trailers, Fire Inspections
5317 Management Services	19,741	0	0	0	0	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5342 Telephone	2,030	1,560	2,000	358	2,000	(Ludlow) Average for longdistance, phone, and fax lines
5382 Hired Equipment	293	350	1,000	0	1,000	Towing
5383 Purchased Services	1,403	1,012	1,000	2,403	1,000	Repairs To Furnance And Boilers
5413 Propane & Other	0	0	200	0	200	Oxygen and Acetylne
5414 Diesel	4,388	6,379	7,500	2,920	6,000	Joe K.
5422 Office Supplies	144	416	300	102	300	Office Supplies
5431 Mechanics/engineer	0	0	0	103	0	
5432 Electrical	955	814	1,500	166	1,500	General Building Supplies
5433 Plumbing	327	486	500	0	500	General Building Supplies
5434 Concrete Etc	97	33	100	0	100	General Building Supplies
5435 Hardware	719	810	1,000	505	1,000	Locks, Nuts , and Bolts
5436 Lumber/wood	2,737	969	2,000	144	2,000	General Building Supplies
5437 Paint & Materials	1,011	1,052	1,000	268	1,000	General Building Supplies
5439 Misc.Building,Equp/Maint Suppl	1,263	654	2,000	631	2,000	Supplies
5454 Custodial Supplies	656	1,036	1,100	813	1,300	Increase $200 Cleaning Supply
5462 Pesticides/herbicides	47	0	200	0	200	Bug Spray and Pestisides
5463 Seed	105	177	150	26	150	Grass Seed
5464 Trees, Shrubs & Plants	22	183	250	0	250	Plants and Flowers
5481 Vehicular Parts Etc	3,888	5,730	5,000	755	5,000	Tires, Batteries, and Filters
5484 Vehicular Fuel	8,756	7,626	9,000	3,832	8,000	Joe K.
5506 Medical - Disposable	0	0	100	0	100	Medical Supplies
5531 Chemicals	212	0	500	0	500	Emergency Start Up Chlorine
5584 Safety Items	311	228	1,000	0	500	Decrease $500 Safety Equipment
5585 Misc. Other Supplies	25	0	100	0	100	Rain Gear
5691 Taxes	25,297	33,942	23,173	0	23,753	
5692 Fees & Permits	0	0	100	0	0	
5711 Travel In State	0	9	0	0	0	
5741 Insurance Premiums	2,871	2,731	2,788	0	2,659	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5854 Furniture & Fixtures	110	449	100	60	100	Office Furniture
5856 Small Tools	244	483	750	116	750	Shovels, Racks, and Hand Tools
5857 Grounds'g Tools	340	730	750	584	750	Brush Cutters and Chain Saws
5860 Op Equip	1,321	366	7,000	4,804	1,500	Decrease $5,500 Lawn Mowers, Pumps
5861 Add'l Equip/Other	119	0	500	0	500	
5920 Depreciation	34,652	37,960	62,262	0	67,928	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
450-214 - Provin Mtn. Reservoir	***1,056,876***	***1,153,528***	***1,509,963***	***576,175***	***1,451,520***	
5101 Per Serv- Reg	385,372	467,504	523,570	243,149	523,490	
5107 Per Serv- O.t.	4,080	5,780	0	14	0	
5171 Med Tax	5,380	6,500	7,750	3,331	8,930	
5174 Retirement	115,540	122,040	152,480	152,480	148,950	
5175 Insurance	68,464	69,374	100,200	64,090	101,630	
5177 Worker's Comp	1,053	283	17,220	8,713	16,750	
5178 Unemployment	498	5,488	2,300	123	2,240	
5212 Electric	20,407	29,506	20,000	-7,965	24,957	
5241 Rep & Maint-vehicle	18,896	21,641	23,000	5,475	23,000	Vehicle repairs and maintenance to 13 vehicles of which 11 have expired warranties
5243 Communications Equip	0	340	500	0	500	Base on current expenditures
5244 Paving	4,200	4,000	4,000	0	4,000	Road repairs, crack and seal, winter damage with repairs in the spring time.
5245 Build/grounds	26,335	28,809	30,000	18,327	30,000	Fence repairs, and gate replacement. Garage floor repair and general bldg, repairs.
5246 Office Equip	0	0	500	0	0	
5247 Operating Equip	944	0	1,000	0	1,000	Repairs as needed including pumps, valves and motors.
5249 Rep & Maint-misc	7,424	6,658	10,000	0	10,000	Compressor, chipper, mowers, Bobcat cutter and snow plow repairs.
5271 Rent & Lease Equip	600	533	1,000	300	1,000	Misc, equipment rentals
5291 Waste Management	2,963	3,473	3,500	1,834	4,000	Trash and dumpster price.Increase 500
5292 Tree & Brush Removel	0	0	0	0	29,000	Tree removal along frontage fence line

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5310 Security Services	1,876	1,022	2,000	2,016	4,000	EPO and police details for trespassers and road work. Increase 2,000
5312 Printing / Binding	260	0	500	0	500	Sign replacement in spring and new meter charts.
5315 Tests / Inspec	1,669	830	5,000	1,686	5,000	Annual meter calibration @Provin . State required inspection on CDI vehicles and trailers.
5341 Postage	0	0	100	0	0	
5342 Telephone	4,010	5,172	9,539	1,980	1,200	(Provin) T1's will are no longer being used in due to ENS circuit.
5382 Hired Equipment	1,262	834	1,000	0	1,000	Towing, excavators and other equipment.
5383 Purchased Services	3,622	2,848	4,000	2,494	4,000	Plumbing repair, boiler cleaning and repairs, septic tank pumping
5412 Fuel Oil	26,067	20,563	28,000	1,904	24,000	8,000 gal/yr est. $3.00 per gal.Decrease 4,000
5413 Propane & Other	432	492	1,000	230	1,000	2 cycle oil for brush cutter and chainsaws welding gases and generators at Provin Mt.
5414 Diesel	8,145	10,454	14,000	3,741	8,000	Joe K.
5415 Other	728	371	800	23	800	200 gal/yr for lantern kerosene $4 per gal. projected.
5422 Office Supplies	415	478	600	195	600	Base on current expenditures
5432 Electrical	2,780	2,658	3,000	2,385	3,000	Repairs to building and electrical equipment.
5433 Plumbing	1,490	1,412	1,500	98	1,500	Up grades and repairs to water lines, new fixtures in buildings.
5434 Concrete Etc	695	320	1,000	819	1,000	Used for building gate markers and boxes and repairs.
5435 Hardware	1,716	1,480	2,000	273	2,000	Windows, doors, locks and keys, etc.
5436 Lumber/wood	607	850	1,000	97	1,000	General building repairs.

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5437 Paint & Materials	1,328	1,559	1,500	195	1,500	Paint for buildings, dig safe and marking paint.
5439 Misc.Building,Equp/Maint Suppl	3,412	3,837	4,000	781	4,000	For roads back fill and drainage materials. Building maintenance for 2 Houses.
5454 Custodial Supplies	668	779	1,000	300	1,000	Rags, paper towels and cleaning supplies
5462 Pesticides/herbicides	321	246	400	172	400	Pesticides, herbicides - bug and bee spray, insect repellant and poison ivy wipes.
5463 Seed	272	303	300	0	300	Reseed damaged areas in spring.
5481 Vehicular Parts Etc	8,951	9,209	11,000	2,566	11,000	Tires batteries and parts for 13 vehicles.
5484 Vehicular Fuel	12,383	12,433	15,000	5,496	11,000	ADMIN
5506 Medical - Disposable	73	63	100	0	100	For medical supplies and first aid kit.
5507 Misc Lab Supplies	0	131	300	0	300	Lab wipes and PH probes.
5531 Chemicals	34	0	3,000	0	3,000	For tank 1 - 4 operation for chlorinating and dechlor tanks during service.
5532 Mixes	2,889	2,181	3,000	1,705	3,000	Salt and sand mix.
5533 Service Line Materials	420	38	500	0	500	Piping, tubing, valves fitting.
5535 Main Line Materials	4,348	2,540	3,000	64	3,000	Piping tubing coupling valves and fitting. Increased work on valve and increased in cost for valve and materials.
5536 Meters & Repair Parts	2,462	3,122	4,000	153	4,000	In line PH meter, lightning protection.
5584 Safety Items	1,817	2,527	2,500	1,578	2,500	Confined space equipment, gas monitors, safety glasses and Tyvek suits for crew and summer help.
5585 Misc. Other Supplies	2,061	2,133	2,500	378	2,500	Lantern replacement, rain gear and boots.
5691 Taxes	15,655	9,911	15,322	0	15,705	ADMIN

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object		Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5712	Subsis In State	0	0	0	58	0	ADMIN
5741	Insurance Premiums	1,954	1,832	1,870	0	1,784	
5851	Add'l Equip/electrical	0	393	500	74	500	Hammer Drill
5854	Furniture & Fixtures	312	450	500	50	500	Cabinets, tables, and chairs for office.
5856	Small Tools	662	755	1,000	150	1,000	Hand tools, shovels, rakes and other purchases as needed.
5857	Grounds'g Tools	2,634	5,482	2,500	690	2,500	Replacement of chain saws, trimmers and brush saws.
5860	Op Equip	11,144	6,410	10,000	8,247	6,000	74" Rear snowblower with chute rotator & deflector. Decrease 4,000
5861	Add'l Equip/Other	1,989	1,274	2,000	270	2,000	Equipment replacement as needed for pumps, generator, emergency lighting.
5910	Long Term Debt/Principal	0	2,036	163,362	0	169,338	ADMIN
5915	Long Term Debt/Interest	108,387	88,668	85,789	44,250	80,257	ADMIN
5918	Loan Service Charges	3,037	2,417	2,309	1,182	2,199	ADMIN
5920	Depreciation	151,731	171,086	200,652	0	133,590	ADMIN

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
450-215 - West Parish Filters	***4,735,521***	***4,762,203***	***5,385,538***	***2,243,997***	***5,231,810***	
5101 Per Serv- Reg	1,541,631	1,608,228	1,723,050	851,832	1,759,370	ADMIN
5107 Per Serv- O.t.	100,265	105,500	0	25,221	0	ADMIN
5108 Shift Diff	18,328	20,314	0	9,759	0	ADMIN
5171 Med Tax	19,996	22,210	25,490	11,885	29,990	ADMIN
5174 Retirement	577,760	492,050	505,310	505,310	506,680	ADMIN
5175 Insurance	342,318	289,238	329,730	214,157	341,560	ADMIN
5177 Worker's Comp	15,206	11,941	56,670	7,820	56,280	ADMIN
5178 Unemployment	2,149	21,832	7,550	225	7,500	ADMIN
5212 Electric	189,441	190,733	200,000	53,273	190,087	Joe K
5241 Rep & Maint-vehicle	28,612	45,795	45,000	9,913	45,000	Repair to 21 fleet vehicles, tractors, trailers and equipment.
5243 Communications Equip	2,037	1,366	0	0	0	Requesting $0. Rick adds $$ to this acct.
5244 Paving	8,750	0	10,000	7,400	10,000	Spring road repair around plant.
5245 Build/grounds	73,501	70,871	74,000	30,688	74,000	General building and grounds, routine maintenance on 2 houses, replace boiler in Kevin's house.
5246 Office Equip	340	0	2,000	0	1,000	Repair to copier, fax, printers and other office equipment.
5247 Operating Equip	26,598	21,123	26,000	19,322	26,000	Repairs including pumps, motors and valves.
5249 Rep & Maint-misc	4,768	6,084	10,000	90	10,000	Repairs various equipment.
5271 Rent & Lease Equip	5,371	308	5,000	765	5,000	Acetylene and oxygen tanks, generator rentals.
5291 Waste Management	7,324	11,506	8,000	4,226	8,500	Waste disposal ie: dumpsters, septic. Increase $500.
5308 Exterminator	585	405	500	0	500	Insect control.
5310 Security Services	0	2,112	2,000	0	2,000	Epo's, security and police details to investigate trespassers and 4 wheelers on watershed and pipeline.

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5312 Printing / Binding	1,132	451	2,500	317	2,500	Annual ordering and replacement for chart recorders and signs.
5315 Tests / Inspec	10,003	9,390	10,000	4,031	10,000	Inspection for fire extinguishers, boilers,pressure vessels, vehicles, 3rd party state required inspections of underground tanks and testing of 54" Raw water line corrosion probes.
5318 Janitorial Services	14,487	15,197	18,000	14,514	18,000	Joe K contract cleaning service
5341 Postage	142	89	300	51	300	Mailing and shipping charges
5342 Telephone	1,457	981	1,000	935	1,000	(WPF) for remaining copper backup phone lines and fax machine..
5382 Hired Equipment	7,060	3,280	10,000	0	8,000	Crane for cleaning intake dam-2 times (fall and spring) a fiscal year and towing. Decrease 2,000
5383 Purchased Services	25,269	27,563	30,000	3,370	30,000	Vender cost to do business. Various repairs to valves and instrumentation, O & M maintenance.
5412 Fuel Oil	193,191	140,102	182,000	12,685	156,000	52,000 gal avg @ $3.00/gal. Reduction of $26,000.
5413 Propane & Other	235	231	500	0	500	Fuel needed welding, 2 cycle oil for brush and chainsaws.
5414 Diesel	10,619	11,707	15,000	2,233	8,000	Joe K
5422 Office Supplies	5,412	6,555	7,000	1,718	7,000	Based on current expenditures, paper, pens, staple goods, etc.
5431 Mechanics/engineer	0	0	1,000	0	0	
5432 Electrical	16,505	19,636	20,000	5,360	20,000	Supplies needed for general repairs and maintenance. Restock supplies in the spring.
5433 Plumbing	12,452	12,956	15,000	8,284	15,000	Supplies needed for general repairs and maintenance, Slow Sand Filter Piping replacement.

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object		Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5434	Concrete Etc	0	186	1,500	0	1,500	Supplies needed for general repairs and maintenance.
5435	Hardware	2,949	2,184	3,000	871	3,000	Supplies needed for general repairs and maintenance.
5436	Lumber/wood	1,285	0	2,000	1,100	2,000	Supplies needed for general repairs and maintenance.
5437	Paint & Materials	1,376	3,954	6,000	273	4,000	Supplies needed for general repairs, maintenance and Liquid Plastic Coatings of buildings. Reduction of $2,000.
5439	Misc.Building,Equp/Maint Suppl	12,213	12,639	12,000	7,257	12,000	Supplies needed for general repairs and maintenance.
5454	Custodial Supplies	3,635	5,717	5,000	676	5,000	Cleaning supplies.
5461	Fertilizers	0	0	250	0	250	Flower beds, landscaping.
5462	Pesticides/herbicides	220	343	500	749	500	Bug spray for bees and insects/wipes for poison ivy.
5463	Seed	225	172	0	0	0	Delete Line item
5464	Trees, Shrubs & Plants	1,411	2,085	2,000	537	2,000	Spring planting of flowers, landscaping for main entrance to the Plant and grounds.
5481	Vehicular Parts Etc	24,727	26,983	25,000	5,367	25,000	Maintenance of 21 vehicles, tractor and equipment supplies.
5484	Vehicular Fuel	18,299	16,522	22,000	6,280	13,000	Joe K
5506	Medical - Disposable	0	435	500	0	500	Purchase and fill first aid kits.
5531	Chemicals	262,121	228,188	260,000	111,978	230,000	Based on current bid price for Caustic Soda, PACL and Filter Aid. PACL/Filter Aid - 6 month trials. May trial ACH in Fall of 2016. Reduction of $10,000.
5532	Mixes	27,584	29,868	30,000	1,136	30,000	Salt and sand winter mix for Plant, access roads, power plant road. Road repair material.

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object		Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5533	Service Line Materials	0	0	1,000	0	1,000	Copper tubing and fittings.
5535	Main Line Materials	600	454	1,000	0	1,000	Valves and piping.
5536	Meter & Repair Parts	245	0	3,000	0	3,000	Flow and elevation meters parts.
5540	Chlorine	54,950	56,100	100,000	31,600	60,000	Weather conditions may impact water quality resulting in increased use of chlorine. Reduction of $20,000.
5543	Polymers	118,872	173,486	200,000	86,684	180,000	Weather conditions may impact water quality resulting in increased use of polymer. Reduction of $20,000.
5545	Misc Public Works Supplies	452	496	500	0	500	Instrument chemical reagents.
5547	Phosphoric Acid	176,980	149,099	200,000	62,264	185,000	Currently Out To Bid
5582	Clothes/Uniforms	1,298	3,250	4,000	1,594	4,000	Protective clothing for 29 SACEA employees per union contract 10.06 B.
5584	Safety Items	6,706	6,539	6,200	1,185	6,200	Misc. safety items, gas monitor, confined space equipment.
5585	Misc. Other Supplies	771	798	1,000	0	1,000	Slush boots and rain gear.
5691	Taxes	0	8,352	3,788	0	3,884	ADMIN
5692	Fees & Permits	76,435	77,022	85,000	0	85,000	ADMIN
5741	Insurance Premiums	162,203	153,423	156,604	0	149,352	
5851	Add'l Equip/electrical	5,101	912	7,000	1,015	7,000	SCADA equipment. Capital chlorine equipment. Replacement/purchase as needed Hilti drills and electric tools and testers.
5854	Furniture & Fixtures	654	1,717	2,000	0	2,000	Purchase as needed including tables and chairs.
5856	Small Tools	3,113	2,705	3,000	626	3,000	Purchase as needed including shovels, rakes and other small tools.
5857	Grounds'g Tools	4,804	6,623	15,000	3,528	15,000	Replacement equipment as needed.

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5860 Op Equip	29,416	34,703	30,000	13,192	30,000	Replace 2 chlorine regulators annually, resanding and washing boxes, equipment replacement as needed.
5861 Add'l Equip/Other	21,657	19,000	20,000	12,146	20,000	Chemical storage tanks, streaming current monitors, sump pumps.
5910 Long Term Debt/Principal	0	1,732	139,000	0	143,500	ADMIN
5915 Long Term Debt/Interest	46,338	100,654	175,030	88,558	170,793	ADMIN
5920 Depreciation	405,937	466,110	520,066	0	482,064	ADMIN

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
450-217 - Cobble Mtn Reservoir	***984,196***	***922,898***	***1,234,015***	***210,822***	***1,188,304***	
5212 Electric	9,711	13,387	10,500	-3,966	11,550	ADMIN
5243 Communications Equip	108	0	0	0	0	
5244 Paving	2,000	2,800	6,000	0	6,000	Road Repairs
5245 Build/grounds	2,835	512	3,000	0	3,000	General Building Repairs for Broom/Gate House
5247 Operating Equip	725	510	1,000	500	1,000	Jet flow gate O&M
5249 Rep & Maint-misc	1,827	0	1,500	0	1,500	Repairs to various equip, IT comunication equip
5271 Rent & Lease Equip	0	0	500	0	0	
5291 Waste Management	951	1,009	1,200	449	1,200	Porta potty
5292 Tree & Brush Removel	68,300	50,340	50,000	58,000	12,000	Decrease 38,000 Hazard tree removals
5310 Security Services	119,968	124,694	135,000	61,072	135,000	Security details, State Police
5342 Telephone	7,372	6,330	6,500	1,769	6,000	(Cobble) 3 T1s are still in use at Cobble. We may switch off to other technology if it becomes available to reduce cost. Cellular @$1,200
5383 Purchased Services	0	0	1,500	0	1,500	Services as needed
5432 Electrical	979	0	1,000	444	1,000	General Building Repairs for Broom/Gate House
5433 Plumbing	298	0	500	0	500	General Building Repairs for Broom/Gate House
5434 Concrete Etc	251	0	1,000	647	1,000	Swales, Building repairs
5435 Hardware	428	363	500	0	500	General Building Repairs for Broom/Gate House
5436 Lumber/wood	345	0	500	936	500	General Building Repairs for Broom/Gate House
5437 Paint & Materials	320	0	500	0	500	General Building Repairs for Broom/Gate House
5439 Misc.Building,Equp/Maint Suppl	141	207	500	199	500	Miscellaneous parts, Gear, Equip
5584 Safety Items	1,098	0	250	0	250	PPE, Confined space equip

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object		Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5585	Misc. Other Supplies	209	439	500	0	500	Building Repairs for Broom/Gate House
5691	Taxes	368,123	373,226	392,849	1,907	407,722	ADMIN
5741	Insurance Premiums	50,360	47,632	48,620	0	46,368	
5856	Small Tools	130	0	250	366	250	Hand tools
5857	Grounds'g Tools	228	0	500	300	500	Saws, Weed wackers, Blades
5910	Long Term Debt/Principal	0	2,926	234,850	0	242,250	ADMIN
5915	Long Term Debt/Interest	209,746	160,780	172,179	88,199	163,185	ADMIN
5920	Depreciation	137,743	137,743	162,817	0	144,029	ADMIN

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
450-230 - Huntington Pump Station	***219,464***	***198,001***	***265,232***	***27,794***	***243,664***	
5212 Electric	7,225	8,420	7,500	2,714	7,823	ADMIN
5215 Water	324	324	0	162	0	ADMIN
5245 Build/grounds	6,045	4,428	6,000	4,500	6,000	General Building and Grounds repairs / including windows, doors, and fences.
5247 Operating Equip	4,123	2,477	6,500	0	4,000	Repairs to pumps, motors valves, hydrulic system and electrical.
5315 Tests / Inspec	841	273	1,000	120	1,000	State required inspections of under ground tank and overhead crane.
5342 Telephone	623	575	650	299	600	(Huntington PS) $50 per month average
5383 Purchased Services	1,165	1,343	1,500	974	1,500	Oil burner cleaning, maintenance repairs / emergency generator maintenance
5412 Fuel Oil	19,777	12,765	20,000	644	17,000	5,600 gal/avg @ $3.00 / gal.Decrease 3,000
5432 Electrical	346	476	500	0	500	Supplies as needed for O&M
5433 Plumbing	328	426	500	0	500	Supplies as needed for O&M
5435 Hardware	143	26	200	151	200	Supplies as needed for O&M
5436 Lumber/wood	223	138	200	0	200	Supplies as needed for O&M
5437 Paint & Materials	192	209	500	283	500	Supplies as needed for O&M
5584 Safety Items	0	104	250	0	250	Supplies as needed for O&M
5585 Misc. Other Supplies	0	0	100	0	100	Supplies as needed for O&M
5691 Taxes	2,500	2,524	3,815	0	3,910	ADMIN
5741 Insurance Premiums	10,229	9,660	9,860	0	9,405	
5851 Add'l Equip/electrical	945	336	1,000	213	1,000	Electrical equipment replacement as needed.
5860 Op Equip	1,079	1,751	2,000	0	2,000	Operating equipment replacement as needed.
5910 Long Term Debt/Principal	0	249	20,000	0	21,000	ADMIN
5915 Long Term Debt/Interest	38,161	26,300	35,170	17,735	34,555	ADMIN

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5920 Depreciation	125,196	125,196	147,987	0	131,621	ADMIN

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
450-240 - Transmission Mains	***953,478***	***926,027***	***2,132,789***	***395,381***	***3,553,466***	
5212 Electric	1,178	1,473	1,300	-903	1,325	Joe K
5691 Taxes	15,655	9,911	22,095	0	22,649	ADMIN
5910 Long Term Debt/Principal	0	15,017	1,205,154	0	2,108,298	ADMIN
5915 Long Term Debt/Interest	806,461	753,746	763,112	390,795	1,121,424	ADMIN
5918 Loan Service Charges	20,431	12,399	10,895	5,489	159,438	ADMIN
5920 Depreciation	109,753	133,482	130,233	0	140,332	ADMIN

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
450-301 - Customer Field Service Adm	***544,386***	***545,146***	***461,810***	***302,703***	***479,230***	
5101 Per Serv- Reg	366,759	364,075	284,550	166,084	295,310	
5107 Per Serv- O.t.	33	26	0	0	0	ADMIN
5171 Med Tax	4,976	4,930	4,210	2,229	5,040	ADMIN
5174 Retirement	99,230	103,130	90,370	90,370	91,580	ADMIN
5175 Insurance	53,714	54,023	54,470	35,328	57,340	ADMIN
5177 Worker's Comp	0	0	9,360	0	9,450	ADMIN
5178 Unemployment	451	4,178	1,250	0	1,260	ADMIN
5241 Repairs & Maint-Vehicle	778	227	1,000	1,144	1,500	Single Vehicle 10 years old (already over expended FY16 by 14%)
5246 Office Equipment	657	0	200	117	200	Contigency for laminator or special label maker
5312 Printing / Binding	3,188	739	1,500	736	1,500	SWSC Notices (Hangars, postcards& letters)
5341 Postage	4,395	5,248	5,000	2,570	5,000	IPP and Meter Replacement Mailings
5422 Office Supplies	9,611	7,864	8,200	3,796	9,500	80% Expended 1st 7mos FY16 cost increases FY14 better "avg yr"
5484 Vehicular Fuel	594	706	1,000	329	1,000	Flat funded
5582 Clothes/Uniforms	0	0	400	0	250	Underestimate FY16 cost for CSR Shirts funds to be used to complete (partial order still will be placed this FY)
5854 Furniture & Fixtures	0	0	300	0	300	parts (prime example: arm rests,) for aging chairs (pre replacement)

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
450-310 - Water Boosters Stations	***186,595***	***160,232***	***197,665***	***68,250***	***178,738***	
5212 Electric	60,474	50,586	65,000	56,017	55,530	
5241 Rep & Maint-Vehicle	85	0	500	44	500	1 vehicle, Emergency generator
5245 Build/grounds	3,910	7,446	9,000	5,365	10,000	Includes Building Maintenance and grounds keeping services
5247 Operating Equip	15,665	9,426	10,000	1,035	8,000	
5249 Rep & Maint-misc	0	75	750	64	750	
5310 Security Services	0	0	0	690	0	IT input
5315 Tests / Inspec	140	50	3,000	67	3,000	Vibration analysis, fire extinguishers
5342 Telephone	7,953	8,287	0	3,668	6,000	(Booster Stations) T1 to iops at $2,400 per year - FDDA Circuits to WSPS at $2,400 per year, phone l;ines to pump stations at 1200 per year
5383 Purchased Services	4,870	3,595	5,000	480	5,000	
5432 Electrical	1,437	1,693	5,000	194	4,000	
5433 Plumbing	408	43	1,000	0	800	
5434 Concrete Etc	0	0	100	0	0	
5435 Hardware	769	347	1,000	0	800	
5437 Paint & Materials	0	0	600	0	600	
5439 Misc.Building,Equp/Maint Suppl	210	15	1,000	373	1,000	
5484 Vehicular Fuel	139	0	0	0	0	
5535 Main Line Materials	8,673	6,617	5,000	0	5,000	
5584 Safety Items	0	0	100	0	0	
5741 Insurance Premiums	7,875	7,461	7,616	0	7,263	
5856 Small Tools	23	0	200	253	200	Wrench set for Worcester Street
5860 Op Equip	0	0	5,000	0	2,500	
5861 Add'l Equip/Other	8,150	0	0	0	0	
5920 Depreciation	65,813	64,592	77,799	0	67,795	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
450-360 - Meters and Field Services	***1,976,721***	***1,997,520***	***2,033,847***	***1,138,179***	***2,008,387***	
5101 Per Serv- Reg	945,975	1,026,176	1,078,540	551,300	1,140,060	
5107 Per Serv- O.t.	81,703	82,740	0	35,404	0	
5108 Shift Diff	4,061	4,052	0	2,127	0	
5171 Med Tax	11,821	13,080	15,960	7,211	19,440	
5174 Retirement	269,280	310,210	320,940	320,940	331,570	
5175 Insurance	159,381	174,341	206,400	132,513	221,330	
5177 Worker's Comp	150,674	91,054	35,470	2,262	36,470	
5178 Unemployment	1,294	13,736	4,730	204	4,860	
5241 Rep & Maint-vehicle	31,080	38,393	33,000	15,098	33,000	Flat (s/be able to maintain given new service truck order 7/15 should arrive next month)
5243 Communications Equip	269	0	0	0	0	IT (Matt Jr.) still budgeting?
5247 Operating Equip	115	825	750	710	1,500	Cloud Access, Maintenance and MeterReadingData Analytics software for Smart Meters
5249 Rep & Maint-misc	2,740	725	500	661	2,000	Primarily outside plumbing contracting for residential work
5312 Printing / Binding	0	814	1,000	0	1,000	Flat:meter tags and vouchers
5315 Tests / Inspec	0	0	0	1,458	2,000	Certification/calibration of Wholesale Mag Meters or Meter Field Test Equip
5319 Police Detail	231	0	500	0	0	
5341 Postage	557	385	500	104	500	Returns for repairs Meter Equip
5342 Telephone	0	15	0	0	0	(Meter field service)
5383 Purchased Services	1,500	22,350	1,500	0	1,500	Contracted Welder if needed as supplement to Const for frozen svcs
5413 Propane & Other	-265	0	500	0	500	Gas for torches when needed
5414 Diesel	17,582	16,042	18,500	5,902	12,000	Will have new diesel trk for FY17
5422 Office Supplies	416	14	500	0	500	Special 3M posting tape, masking/packing tape

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5432 Electrical	0	0	0	384	0	
5433 Plumbing	626	376	1,000	349	750	Misc Plumbing Parts for Large Meter installs/test equipment
5435 Hardware	508	0	500	0	500	Non Stock Nuts/Bolts for C+I Meter work
5437 Paint & Materials	166	226	200	126	200	Upkeep of meter room/meter equipment
5439 Misc.Building,Equp/Maint Suppl	4,277	5,391	5,000	3,114	5,500	Predominantly for exp billed by Joe S split among depts
5481 Vehicular Parts Etc	809	1,130	1,500	316	750	Racks, mounts for tools and reading
5484 Vehicular Fuel	27,901	18,660	30,000	6,405	15,000	More Diesel trucks than Gas
5531 Chemicals	474	0	750	115	600	Dye tabs for consumption surveys
5532 Mixes	44	993	0	0	0	
5533 Service Line Materials	57,671	46,459	50,000	28,956	50,000	Materials for Services performed by Meter/Field Services
5534 Hydrants & Rep Parts	178	0	0	30	0	
5535 Main Line Materials	3,924	6,532	5,000	2,905	5,000	Materials for Services performed by Meter/Field Services
5536 Meters & Repair Parts	11,203	11,887	7,500	15,673	22,000	Parts for planned meter technology upgrades (remote antennas) and replacements of aged 3" Hydrant Meters
5545 Misc Public Works Supplies	1,808	2,496	1,000	1,144	1,500	fire hose/ brass adaptors for hyd meter rentals
5584 Safety Items	2,549	3,185	600	0	0	SERTS COVERING $$$ (harnesses still to be ordered in FY16)
5711 Travel In State	0	29	0	11	0	
5854 Furniture & Fixtures	450	0	300	0	300	Small racks and shelving unit parts for meter room
5856 Small Tools	5,424	5,876	5,000	2,184	5,000	Replacement of Aged/Worn tools
5860 Op Equip	4,129	5,574	5,000	575	5,000	Replacement ofAged /Worn equip; locators listening devices

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5861 Add'l Equip/Other	13,136	8,449	8,500	0	8,500	Smart metering devices to continue AMI hybridization
5920 Depreciation	163,029	85,304	192,707	0	79,557	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
450-362 - Water Quality	***1,672,882***	***1,473,697***	***1,661,502***	***806,870***	***1,314,606***	
5101 Per Serv- Reg	798,239	775,873	838,980	367,984	713,120	
5107 Per Serv- O.t.	62,157	37,040	0	26,034	0	
5108 Shift Diff	7	0	0	4	0	
5171 Med Tax	11,700	11,058	12,410	5,374	12,160	
5174 Retirement	258,650	242,230	249,660	249,660	207,400	
5175 Insurance	150,576	137,739	160,560	103,883	138,450	
5177 Worker's Comp	9,817	6,771	27,300	2,230	22,820	
5178 Unemployment	1,127	10,513	3,680	7,508	3,040	
5241 Repair & Maint-Vehicle	66,149	52,329	45,000	11,222	40,000	Maintain 10 vehicles
5247 Operating Equip	2,833	0	3,000	0	7,000	5 Valves machines, 7 controllers, requesting 4 laptops
5249 Rep & Maint-misc	0	19	0	0	0	
5319 Police Detail	19,930	13,100	25,000	3,530	15,000	UDF main roads
5383 Purchased Services	2,023	118	5,000	0	1,500	Plumbers
5414 Diesel	29,989	23,084	30,000	7,679	20,000	
5422 Office Supplies	2,430	1,548	1,500	0	1,500	Door hangars for UDF, will spend in the spring
5435 Hardware	563	767	0	27	0	
5437 Paint & Materials	2,053	3,750	5,000	577	5,000	Painted 1,071 hydrants in FY15
5439 Misc.Building,Equp/Maint Suppl	5,707	4,960	5,000	1,852	5,000	Batteries, nuts and bolts, stocked items
5481 Vehicular Parts Etc	1,476	1,122	2,000	41	2,000	wiper blades, mats, bulbs
5484 Vehicular Fuel	15,335	10,942	17,000	3,267	9,000	
5533 Service Line Materials	2,301	2,296	1,000	1,093	2,000	Small valves, fittings for PCU
5534 Hydrant & repair Parts	53,943	36,830	25,000	9,570	25,000	Rebuilt/repaired 627 hydrants
5535 Main Line Materials	8,314	6,085	5,000	1,075	5,000	Gate boxes, replacement nuts, blow offs
5536 Meters & Repair Parts	0	920	1,000	0	1,000	5 hydrant meters
5540 Chlorine	1,561	0	2,000	0	1,000	Emergcy chlorine for PCU

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object		Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5545	Misc Public Works Supplies	3,441	3,901	3,000	376	2,000	Fire hoses/hydrant fittings
5584	Safety Items	2,617	2,398	2,000	0	0	
5763	Damages/vehicle	0	4,380	0	2,000	0	
5854	Furniture & Fixtures	0	650	500	0	500	Chairs, mats
5856	Small Tools	7,995	6,393	10,000	872	5,000	Box cleaners, partner saw, hand drills
5860	OP Equip	8,186	3,869	7,500	1,011	2,500	Water testing equipment, sample station repairs
5861	Add'l Equip/Other	0	0	2,000	0	0	Cover under OP Equip
5920	Depreciation	143,763	73,014	171,412	0	67,616	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
450-380 - Water Distribution Services	***5,805,002***	***6,412,092***	***7,311,508***	***2,961,255***	***7,182,760***	
5101 Per Serv- Reg	1,490,415	1,516,995	1,762,770	835,901	1,822,880	
5107 Per Serv- O.t.	166,408	151,578	0	71,793	0	
5108 Shift Diff	4	0	0	0	0	
5171 Med Tax	19,394	20,665	26,080	11,622	31,080	
5174 Retirement	495,310	487,175	524,550	524,550	530,160	
5175 Insurance	288,384	275,138	337,340	217,413	353,890	
5177 Worker's Comp	44,130	69,533	57,980	8,225	58,320	
5178 Unemployment	1,789	24,472	7,730	1,795	7,770	
5241 Rep & Maint-Vehicle	229,668	212,834	220,000	91,803	220,000	Comm. Vehicle Repairs & Maintenance
5243 Communications Equip	332	702	0	0	0	
5244 Paving	242,055	533,687	540,000	407,373	450,000	60 Streets on City List, potential for more. This number reflects over all budget
5246 Office Equp	0	103	0	0	1,000	Paper Shredder (Industrial)
5247 Operating Equip	14,018	20,326	20,000	20,761	25,000	Repairs to Commission owned Small Equipment
5271 Rent & Lease Equip	56,459	31,689	40,000	26,528	40,000	Bare rental equipment.
5315 Testing & Inspection	1,005	0	1,000	0	1,000	Soil Samples & Compaction Testing
5319 Police Detail	165,960	212,556	180,000	91,480	180,000	Hired Police For working in the streets
5382 Hired Equipment	30,945	27,135	20,000	19,875	20,000	Excavation Equipment, Hauling Equipment (With an Operator)
5383 Purchased Services	10,012	4,158	5,000	2,793	5,000	Welders,Plumbers,Special Water Related Services
5414 Diesel	87,406	72,490	90,000	24,976	60,000	
5433 Plumbing	456	550	2,500	0	1,500	Repairs to Customer Plumbing, Incidental Plumbing
5434 Concrete etc	22,998	17,446	16,000	7,789	0	Move To Mixes
5435 Hardware	553	898	800	25	800	Pins,Clips,Hangers,Water Related Incidentals

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object		Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5436	Lumber/Wood	4,804	4,341	6,000	4,837	6,000	Forms, Small Repairs, Incidental Water Work & Repairs
5437	Paint & Materials	944	2,162	2,000	672	2,000	Road Marking, Pavement Management
5439	Misc.Building,Equp/Maint Suppl	15,074	18,023	20,000	6,947	20,000	Cutters,Blades,Incidental Materials for Repairs, Water Related Incidentals
5463	Seed	1,893	1,498	1,500	946	1,500	Repairs to customer property.
5481	Vehicular Parts Etc	932	1,373	0	394	0	
5484	Vehicular Fuel	27,756	23,974	32,000	10,411	21,000	
5532	Mixes	178,782	172,327	200,000	103,837	200,000	Asphalt, Cold Patch, Hard Pack,Stone,Sand,Loam,Concrete,Flow Fill
5533	Service Line Materials	81,475	75,675	98,000	70,703	98,000	Service Replacements,Repairs,Pavement Management
5534	Hydrants & Repair Parts	1,351	1,323	0	744	0	
5535	Main Line Materials	147,379	221,621	200,000	98,041	200,000	Main Breaks, Repairs to Distribution System, Pavement Management
5536	Meter & Repair Parts	7,623	3,435	2,000	6,836	2,000	Special Related Meter Parts
5584	Safety Items	28,377	27,455	15,000	8,127	15,000	Cones,Barrels,Roadway Signs, Related Shoring Equipment
5692	Fees & Permits	1,900	2,000	2,000	400	2,000	Ludlow Permits, Average 50 Job Per Year
5854	Furniture & Fixtures	189	752	500	0	1,200	3 Office Chairs
5856	Small Tools	26,387	36,036	25,000	14,709	25,000	Hand Tools, Power Tools, Pneumatic Tools
5860	Op Equip	69	93	0	0	0	
5861	Add'l Equip/Other	44,866	44,118	22,000	17,405	25,000	Saws, Pumps, Leak Detector, Small Trailer, Power Broom
5910	Long Term Debt/Principal	0	5,896	473,150	0	488,900	
5915	Long Term Debt/Interest	280,549	368,108	494,528	251,543	476,762	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5920 Depreciation	1,586,951	1,721,752	1,866,080	0	1,789,998	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
450-390 - Cross Connection Services	***463,608***	***452,694***	***508,198***	***284,544***	***430,590***	
5101 Per Serv- Reg	307,150	294,086	313,710	139,926	269,310	
5107 Per Serv- O.t.	4,405	1,070	0	83	0	
5171 Med Tax	2,569	2,608	4,640	1,381	4,600	
5174 Retirement	91,370	93,560	99,640	99,640	83,520	
5175 Insurance	49,532	49,011	60,050	38,650	52,290	
5177 Worker's Comp	0	0	10,320	126	8,620	
5178 Unemployment	296	3,721	1,380	0	1,150	
5241 Rep & Maint-vehicle	1,490	3,493	4,000	3,442	4,000	used 4742.26 level fund
5312 Printing / Binding	664	151	800	0	800	Test forms
5341 Postage	48	20	100	0	100	Will use this by years end
5422 Office Supplies	979	593	1,000	520	1,000	Will use this by years end
5435 Hardware	1,984	2,002	3,000	0	3,000	test kits, case and addapters
5439 Misc.Building,Equp/Maint Suppl	0	5	0	1	100	Stockroom vending machines
5481 Vehicular Parts Etc	2	22	0	0	0	
5484 Vehicular Fuel	3,099	2,338	3,400	765	1,600	
5584 Safety Items	11	15	0	0	0	
5854 Furniture & Fixtures	0	0	500	0	500	used 500 - level fund
5856 Small Tools	10	0	0	10	0	
5920 Depreciation	0	0	5,658	0	0	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
451-401 - FOG & Local W.W. Admin	***148,460***	***147,826***	***164,690***	***72,357***	***56,800***	
5101 Per Serv- Reg	85,993	88,673	96,830	24,048	30,350	
5171 Med Tax	1,206	1,240	1,440	336	520	
5174 Retirement	34,550	35,250	30,760	30,760	9,420	
5175 Insurance	18,712	18,491	18,540	12,062	5,900	
5177 Worker's Comp	0	1,436	3,190	4,188	980	
5178 Unemployment	113	1,422	430	2	130	
5241 Rep & Maint-Vehicle	2,349	822	3,500	607	3,000	Older vehicle.
5246 Office Equipment	9	0	500	326	0	
5312 Printing / Binding	4,679	209	5,000	0	2,500	Printing flyers, inc.
5341 Postage	0	0	1,000	0	500	Postage
5343 Advertising	550	117	1,500	0	1,000	Advertising
5422 Office Supplies	5	0	1,500	0	500	
5484 Vehicular Fuel	194	166	500	27	500	
5854 Furniture & Fixtures	100	0	0	0	0	
5860 Op Equip	0	0	0	0	1,500	Purchase part of copier

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
451-410 - Flood Control	***75,681***	***0***	***89,451***	***0***	***33,301***	
5920 Depreciation	75,681	0	89,451	0	33,301	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
451-412 - Indian Orchard P.S.	***820,682***	***782,945***	***1,371,285***	***379,097***	***1,312,769***	
5212 Electric	303,167	290,437	350,000	157,105	296,802	
5384 WWTP Contract Services	47,722	48,346	48,575	24,265	49,029	
5910 Long Term Debt/Principal	0	6,646	533,347	0	550,248	
5915 Long Term Debt/Interest	407,831	376,094	370,453	189,240	354,119	
5918 Loan Service Charges	17,785	17,246	16,694	8,487	16,128	
5920 Depreciation	44,176	44,176	52,216	0	46,443	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
451-420 - Other Sanitary Pumps	***465,567***	***509,219***	***659,479***	***116,274***	***638,197***	
5212 Electric	196,299	247,708	220,000	72,206	222,003	
5213 Natural Gas	15,893	14,676	13,000	576	15,283	
5910 Long Term Debt/Principal	0	1,984	159,250	0	163,450	
5915 Long Term Debt/Interest	94,462	87,836	80,985	42,142	73,941	
5917 Series A 2007 Unamoritized Ref	1,350	1,350	0	1,350	0	
5920 Depreciation	157,564	155,664	186,244	0	163,520	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
451-502 - Operations Mgmt WW	***170,699***	***173,807***	***186,500***	***114,486***	***127,570***	
5101 Per Serv- Reg	110,312	114,724	116,130	62,436	81,900	
5171 Med Tax	1,463	1,527	1,720	835	1,400	
5174 Retirement	33,300	33,970	36,890	36,890	25,400	
5175 Insurance	18,052	17,845	22,230	14,325	15,900	
5177 Worker's Comp	3,079	0	3,820	0	2,620	
5178 Unemployment	66	1,323	510	0	350	
5241 Rep & Maint - Vehicle	29	0	0	0	0	
5484 Vehicular Fuel	0	20	0	0	0	
5920 Depreciation	4,399	4,399	5,200	0	0	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
451-510 - Sewer Collection Services	***7,440,070***	***8,678,070***	***13,877,668***	***4,451,650***	***14,997,461***	
5101 Per Serv- Reg	1,329,118	1,377,088	1,963,660	827,979	2,084,230	
5107 Per Serv- O.t.	111,762	78,033	0	36,901	0	
5171 Med Tax	17,743	19,935	29,050	11,888	35,530	
5174 Retirement	397,940	478,120	584,330	584,330	606,160	
5175 Insurance	231,587	262,658	375,663	239,776	404,630	
5177 Worker's Comp	33,972	156,279	64,580	53,014	66,680	
5178 Unemployment	1,775	20,690	8,610	484	8,890	
5241 Rep & Maint-Vehicle	103,117	96,527	85,000	38,374	85,000	Vehicle Maintenance
5243 Communications Equip	6,148	7,644	5,000	4,275	3,000	Repair/Replacement Radios as needed for personnel and vehicle
5244 Paving	63,734	171,956	200,000	84,915	180,000	On-Call Paving Contract and Pavement Management
5247 Operating Equip	101,672	83,636	75,000	35,332	75,000	Heavy Equipment Repairs/Jet-Vac Repairs
5249 Rep & Maint-misc	7,905	10,520	10,000	6,756	10,000	Small/Large Tool Repairs
5271 Rent & Lease Equip	123,447	0	324,245	172,927	201,000	Jet VAC Lease 161K Other 40K
5291 Waste Management	1,182	1,881	2,000	1,317	3,500	Easement Debris, Home Debris, Dumpster
5292 Tree & Brush Removal	0	0	20,000	13,800	20,000	Contractor Provided Tree Removal as Needed
5306 Engineering & Arch	103,655	53,540	85,000	1,903	90,000	CSO Reporting, Metering, & Support
5319 Police Detail	49,970	58,493	80,000	42,618	80,000	Traffic Details for 2 Construction Crews, CCTV Crew,Jet-Vac Crews
5382 Hired Equipment	10,765	949	20,000	22,319	20,000	Excavator Transport, Dump Truck Contractors, Other
5383 Misc. Purhased Service	204,834	175,284	217,000	98,122	225,000	Root Control, Vehicles Modifications, CSO Monitoring, Specialized Repair Services, Etc.
5384 WWTP Contract Services	954,448	966,919	971,439	485,309	980,570	
5414 Diesel	73,197	58,290	80,000	22,135	55,000	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object		Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5422	Office Supplies	4,034	5,249	5,000	2,918	5,000	Office Supplies for Main Office and CCTV Office
5433	Plumbing	657	1,647	1,500	497	1,500	Internal Plumbing Needs/Repairs
5434	Concrete etc	23,349	25,647	35,000	17,319	35,000	Sidewalk Restoration
5435	Hardware	4,070	4,979	5,000	1,742	5,000	Small Parts, Misc.
5436	Lumber/wood	790	1,167	4,000	359	4,000	Framing Wood and Buidling Wood for Sidewalks and Fabrication as needed
5437	Paint & Materials	1,520	2,534	2,000	174	2,000	Misc. Paint needs for Equipment, Offices, Garage, Fabrication, Repairs
5439	Misc.Building,Equp/Maint Suppl	24,063	31,174	30,000	11,852	30,000	Stock Room Items, Misc. Purchases
5463	Seed	1,373	1,498	1,500	0	1,500	Property Restoration
5464	Trees Shrubs & Plants	0	0	1,000	0	1,000	Property Restoration as needed
5481	Vehicular Parts Etc	15,100	17,673	17,000	9,787	17,000	Replacement Parts, Internal Repairs, Safety Items, etc.
5484	Vehicular Fuel	55,388	35,428	57,000	16,256	33,000	
5531	Chemicals	50,471	48,456	40,000	25,465	60,000	Sewer Solvents and Other Chemicals for Daily Activities
5532	Mixes	117,246	120,739	140,000	71,233	140,000	Gravel, Stone, Asphault, etc.
5533	Service Line Materials	39,227	31,200	50,000	13,488	50,000	House Service Repairs, Pipe, Fittings, other Associated Parts
5534	Hydrants & Repair Parts	721	0	0	501	0	
5535	Main Line Materials	87,777	125,955	140,000	66,657	140,000	Main Line Repairs, Pipe, Manholes, other Associated Parts
5536	Meters & Repair Parts	0	14	0	0	0	
5545	Misc Public Works Supplies	4,245	4,863	5,000	0	5,000	Misc. Items, CB Covers, Small Parts
5584	Safety Items	15,332	17,879	15,000	13,032	15,000	Asbestos Safety Materials, Cones, Barriers, Gloves, etc.
5585	Misc. Other Supplies	893	720	1,000	65	1,000	Misc. Small Items as Needed

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object		Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5692	Fees & Permits	5,236	3,004	10,000	1,230	10,000	
5762	Damages Persons/property	0	28,448	0	0	0	
5763	Damages/vehicle	0	6,447	0	0	0	
5854	Furniture & Fixtures	0	7,134	0	264	1,000	Misc. Office Needs
5855	Computers	0	0	0	3,270	0	
5856	Small Tools	15,447	19,163	17,500	9,108	17,500	Small Hand Tools, Large Hand Tools, Small Power Tools
5860	Op Equip	21,928	40,815	50,000	18,958	50,000	Bobcat Attachments, Cut-Off Saws, Chain Saws, Heavy Power Equipment, Compactors, Etc.
5861	Add'l Equip/Other	9,009	36,734	40,000	20,989	40,000	CCTV Parts/Equipment, Welding/Fabrication Tools and Gases, Rodding Equipment, Service Camera, Root Cutters, Nozzles
5910	Long Term Debt/Principal	0	49,118	3,941,954	0	4,034,599	
5915	Long Term Debt/Interest	1,692,315	1,838,291	2,458,373	1,217,276	2,334,871	
5918	Loan Service Charges	36,870	44,371	179,043	144,737	67,721	
5920	Depreciation	1,285,036	2,049,282	1,430,221	0	2,661,580	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
452-601 - Treatment Plant Administrati	***14,274,031***	***14,487,171***	***15,159,263***	***6,942,503***	***15,399,739***	
5101 Per Serv- Reg	119,018	135,686	0	0	27,300	
5171 Med Tax	1,699	1,947	0	0	470	
5174 Retirement	35,920	36,650	0	0	8,470	
5175 Insurance	19,372	19,321	0	529	5,300	
5177 Worker's Comp	0	0	0	0	880	
5178 Unemployment	67	1,423	0	0	120	
5212 Electric	1,433,476	1,631,833	1,560,000	859,057	1,532,655	
5213 Natural Gas	121,530	122,684	119,000	50,270	122,107	
5383 Purchased Services	0	3,300	0	0	0	
5384 WWTP Contract Services	10,516,437	10,520,491	10,395,526	5,903,774	10,859,658	
5691 Taxes	7,828	19,821	15,802	0	19,198	
5910 Long Term Debt/Principal	0	11,240	902,085	0	933,685	
5915 Long Term Debt/Interest	208,935	192,914	155,520	20,516	121,566	
5917 Series A 2007 Unamoritized Ref	6,943	6,943	0	6,943	0	
5918 Loan Service Charges	4,043	3,555	3,053	1,654	2,535	
5920 Depreciation	1,699,004	1,679,603	2,008,277	0	1,765,795	
5941 Amoritize Deferred Charges	99,759	99,759	0	99,759	0	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
454-701 - Power Plant Administration	***1,063,136***	***1,261,739***	***1,184,052***	***558,143***	***1,336,002***	
5385 Brokerage Fees	189,187	220,210	200,000	110,315	216,000	
5390 Contract Services	699,623	872,711	800,000	447,828	950,000	
5741 Insurance Premiums	101,573	96,064	98,056	0	93,515	
5920 Depreciation	72,754	72,754	85,996	0	76,487	

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
493-901 - IPP Admin	***244,838***	***251,855***	***273,534***	***135,873***	***283,260***	
5101 Per Serv- Reg	139,847	143,271	145,880	50,445	148,830	
5171 Med Tax	1,924	1,959	2,160	692	2,540	
5174 Retirement	42,480	43,510	46,330	46,239	46,150	
5175 Insurance	22,895	22,767	27,930	18,020	28,900	
5177 Worker's Comp	0	1,278	4,800	0	4,770	
5178 Unemployment	123	1,732	640	0	640	
5241 Rep & Maint-vehicle	183	755	2,500	1,015	2,500	Truck getting older
5246 Office Equip	0	0	750	0	0	
5247 Operating Equip	0	0	750	0	0	
5304 Conferences & Seminars	0	0	1,000	0	1,000	NACWA & EPA Workshop in May
5312 Printing / Binding	492	219	1,000	170	1,000	Tags, reports, etc.
5315 Tests / Inspec	27,196	27,853	25,000	18,174	30,000	Sampling after June
5341 Postage	27	0	500	53	250	Certified mail for permits & Enforcement
5342 Telephone	120	120	180	60	180	(IPP)
5343 Advertising	0	0	75	0	75	SIU SNC Notice Contigency
5383 Purchased Services	495	555	500	405	500	Lab Equipment Calibration
5422 Office Supplies	69	663	600	0	600	IPP Office Supplies/Splitwith FOG & CCCP
5439 Misc.Building,Equp/Maint Suppl	0	1	0	1	0	
5481 Vehicular Parts Etc	5	2	0	0	0	
5484 Vehicular Fuel	1,052	956	1,500	505	1,000	
5507 Misc Lab Supplies	891	662	1,200	0	1,750	Lab Supplies
5512 Software	1,285	0	0	0	0	
5584 Safety Items	13	8	1,500	0	1,500	Gas Meter & Replacement Parts
5711 Travel In State	0	11	100	3	100	IPP Training
5712 Subsis In State	4	0	500	0	500	IPP Training
5721 Travel Out Of State	625	345	1,000	0	1,000	NACWA & EPA Workshop in May

SWSC Operating Budget

For the Year Ending 6/30/17

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5722 Subsis Out Of State	0	123	1,000	0	1,000	NACWA & EPA Workshop in May
5731 Dues & Membership	0	0	50	0	50	Pretreatment Forum
5856 Small Tools	48	0	100	0	100	Contingency
5860 Op Equip	0	0	0	91	3,000	
5920 Depreciation	5,065	5,065	5,989	0	5,325	
Grand Totals	***53,401,477***	***55,515,930***	***67,424,179***	***27,646,065***	***69,855,865***	

Appendix E – Suez's Wastewater Collection System Operations and Maintenance Program and Record Keeping

190 M Street Extension
Agawam, MA 01001
Tel 413-732-6501
Fax 413-732-7071
www.suez-na.com

March 3, 2017

Josh Schimmel
Executive Director,
Springfield Water & Sewer Commission
250 M St Ext
Agawam, MA 01001

RE: NPDES MA0103331 CSO Certification Letter for 2016

Dear Mr. Schimmel

In accordance with requirement of NPDES MA 0103331, Section 2,a, by this letter SUEZ Water Environmental Services Inc. hereby certifies that the calendar year 2016 weekly CSO inspections have been conducted, results recorded, and records maintained.

Sincerely,

Mickey J Nowak

Mickey Nowak,
Project Manager
SUEZ Water Environmental Services Inc.

cc: file

SUEZ Water's Wastewater Collection System Operation and Maintenance Program and Record Keeping 2016

Location	Task	Frequency	Responsibility	Hard Copy Records	Hard Copy Record Location	Electronic Data	Electronic Data Location
Clinton Street Grit Pit							
Clinton Street Grit Pit	Grit level monitoring	Weekly	SUEZ Water Maintenance Dept. Collections Group	Weekly Grit Pit Monitoring Log Sheet	Grit Pit Notebook in Collections Supervisor's Office	Master Monitoring and Cleaning Log, PM Work Order COL-SPFLD-CLIN-GPIT	CMMS MP2
Clinton Street Grit Pit	Grit Pit Cleaning	As Required	SUEZ Water Maintenance Dept Collections Supervisor	Monthly Work Order & Contractor's Work Ticket	Vendor File in Administration Office	Work Order COL-SPFLD-CLIN-GPIT, Master Monitoring and Cleaning Log	CMMS MP2
Clinton Street Grit Pit	Monitoring and Cleaning Activity Summary	Monthly	SUEZ Water Maintenance Dept	Clinton Street Grit Pit Monthly Summary Report	Monthly Client Report	Weekly Grit Level Monitoring and Grit Quantities Removed	UW Server Hach WIMS Database
Connecticut River Interceptor Sewer CCTV							
CT River Interceptor	CCTV Inspection and Report	Following cleanings and as needed	SUEZ Water Project Manager	Inspection Report and Summary Table	UW Central File Room	Connecticut River Cleaning CCTV	On CD in Report Binder
Connecticut River Interceptor Sewer Cleaning							
CT River Interceptor	Heavy Cleaning	Yearly	SUEZ Water Designated Project Engineer	Cleaning Activity Reports	UW Central Central File Room	Connecticut River Interceptor Sewer Cleaning Summary Report	UW Server
CT River Interceptor	Focus Areas Spot Cleaning	Yearly	SUEZ Water Maintenance Dept Collections Supervisor	Cleaning Activity Log	Interceptor Cleaning Notebook in Collections Supervisor's Office	Work Order - COL-SINTRCPT-GRT-CLEAN Sewer Grit Quantities Removed	CMMS MP2 PM Work Order History, Hach WIMS Databse
CSO Outfall Flood Gate and Sluice Gate Maintenance							
Flood Outfall Sluice, Flood Door and Backwater Flap Gates	Inspection, cleaning, exercising and lubrication	Quarterly	SUEZ Water Maintenance Dept Collections Group	Flood Gate Inspection and PM Activity Log and Flood Station Log Book Entries	Flood Gate Inspection and PM Activity Log Sheet and Flood Station Log Book	Preventative Work Order - COL-SPFLD-FLOOD-GATES	CMMS- MP2 PM Work Order Hisrtory
Flood Outfall Sluice, Flood Door and Backwater Flap Gates	Operation (Open/Close)	As Needed	SUEZ Water Maintenance Dept Collections Group	Flood Gate Status Board, Work Order, Flood Gate Operation Log and Monthly Flood Gate Summary Report	Collections Sytem Supervisor's Office, CMMS MP2 and Monthly Client Report	Corrective Work Order	CMMS-MP2 Corrective Work Order History, UW Server, Collections System Office
Wastewater Pump Stations							
Sanitary Pump Stations	Regulatory Mandated Physical Inspections	Daily	SUEZ Water Maintenance Dept Collections Group	Daily Station Check Log Sheet, Pump Station Log Book Entries	Collections Supervisor's Office, individual Pump Stations	Station Check PM Weekly Work Order	CMMS-MP2 PM Work Order History
Sanitary Pump Stations	Corrective Maintenance	As Performed	SUEZ Water Maintenance Dept Collections Group	Work Order, Pump Station Log Book Entry	Collections Supervisor's Office, individual Pump Station Log Books	Corrective Maiantenance Work Order	CMMS-MP2 Corrective Work Order History
Sanitary Pump Stations	Alarm Event Reporting	When Alarm Event Occurs	SUEZ Water Operations Group Senior Operator	Springfield Pump Station Incident Report	Current Month - SWTO Office, Prior Months - Collection System Supervisor's Office	NA	NA
Sanitary Pump Stations	Pump Station Monthly Summary Reporting	Monthly	SUEZ Water Maintenance Dept.	Alarm Log Summary, Collection System Report, Pump Run Time Report, Pump Station Report	Monthly Client Report	Pump Station Monthly Alarm Symmary Report and Pump Station Monthly Data Historian Report	UW Server
Combined Sewer Overflows							
CSO Weirs/Outfalls	Regulatory Mandated Physical Inspections	Twice Weekly	SUEZ Water Maintenance Dept Collections Group	Weekly CSO Inspection Log	Current Month - SWTO Office, Prior Months - Collection System Supervisor's Office, Monthly Client Report	NA	NA

SUEZ Water's Wastewater Collection System Operation and Maintenance Program and Record Keeping 2016

Location	Task	Frequency	Responsibility	Hard Copy Records	Hard Copy Record Location	Electronic Data	Electronic Data Location
CSOs	DWO Alarm Response	When Alarm Event Occurs	SWTO & Operations Superintendent	DWO Event Reports to EPA and MADEP, CSO Physical Inspection Report	Centrial File Room, Regulatory Files/NPDES MA 010331, Collections System Supervisor's Office	Alarm event, acknowledgement, clearing and comments record	ADS IntelliServe Data Base and Reporting System - Alarm History Log
CSOs	DWO Event Review	Daily	Operations Superintendent & Project Manager			Prior 24 hour period DWO Event Report	ADS IntelliServe Data Base and Reporting System - Reports
CSOs	CSO Activation Review	Monthly	ADS and Operations Superintendent	Monthly CSO Activation Report	Monthly Client Report	Monthly CSO Activation Report	ADS IntelliServe Data Base and Reporting System - Activation Report , OW Server
CSOs	CSO Activation Summary and Discharge Quantification	Monthly	ADS and Operations Superintendent	Annual CSO and Nine Mininum Controls Report	Centrial File Room, Regulatory Files/NPDES MA 010331	Monthly and Annual CSO Discharge Reports	UW Server - S:/Management/CSO Discharge Quantities/ CSO Overflow Volumes Jan to Dec (year).xls
CSOs	Major Service on Monitoring Equipment	Monthly	ADS and Operations Superintendent	Monthly Summary of Major Service Conducted	Monthly Client Report	NA	NA
System Flow Metering Stations							
Springfield System Connections, SRWTF Channels 1 , 2, 3 and 4	Data Download	Monthly	I&C Supervisor	NA	NA	Meter 15 minute flow data	UW Server
Springfield System Connections, SRWTF Channels 1 , 2 , 3 and 4	PM/Calibration	6 months	I&C Supervisor	Vendor Calibration Reports	I&C Supervisors Office	CMMS - MP2	PM Work Order History

2016 CSO Discharge Summary

Springfield, MA

Discharge Summary By Site				Monitoring Method
Site	Watershed	# of Events	Total Volume	
CSO 017	Mill River	7	67,851	downstream ultrasonic level
CSO 019	Mill River	3	1,142,252	upstream ultrasonic level
CSO 024	Mill River	1	21,126	downstream ultrasonic level
CSO 025	Mill River	13	1,377,830	downstream ultrasonic level
CSO 045	Mill River	6	1,491,797	downstream ultrasonic level
CSO 046	Mill River	6	618,669	downstream ultrasonic level
CSO 048	Mill River	11	439,059	downstream ultrasonic level
	Mill River Total =	**47**	**5,158,584**	
CSO 034	Chicopee River	10	61,447	downstream ultrasonic level
CSO 035	Chicopee River	5	337,987	downstream ultrasonic level
CSO 037A	Chicopee River	12	226,657	downstream ultrasonic level
CSO 036A	Chicopee River	5	1,327,395	downstream ultrasonic level
	Chicopee River Total =	**32**	**1,953,486**	
CSO 007	Connecticut River	3	450,773	downstream ultrasonic level
CSO 008	Connecticut River	2	380,020	inclinometer & velocity meter
CSO 010	Connecticut River	36	34,047,622	downstream ultrasonic level
CSO 011	Connecticut River	4	208,783	upstream ultrasonic level
CSO 012	Connecticut River	17	44,169,891	downstream ultrasonic level
CSO 013	Connecticut River	19	13,062,740	downstream ultrasonic level
CSO 014	Connecticut River	39	9,357,306	downstream ultrasonic level
CSO 015A	Connecticut River	18	4,874,542	downstream ultrasonic level
CSO 015B	Connecticut River	1	3,136	downstream ultrasonic level
CSO 016	Connecticut River	32	40,031,958	downstream ultrasonic level
CSO 018	Connecticut River	7	455,784	downstream ultrasonic level
CSO 049	Connecticut River	11	482,649	downstream ultrasonic level
	Connecticut River Total =	**189**	**147,525,203**	
	System Total =	**268**	**154,637,274**	
042 Inf Bypass	Connecticut River	**8**	**6,435,000**	weir ultrasonic level
WWTP Sec Bypass	Connecticut River	**1**	**6,771,000**	calculation

Discharge Summary By Month		
Month	Avg Rain	Total Volume
January	1.43	10,952,302
February	4.18	39,562,537
March	2.60	8,951,009
April	2.38	6,674,655
May	2.87	7,700,069
June	1.84	9,075,103
July	1.56	1,048,440
August	4.43	40,536,540
September	4.09	14,848,997
October	1.89	173,835
November	2.09	13,363,786
December	1.89	1,750,000
Total	**31.27**	**154,637,274**

Rainfall Summary	
Site	Total Rain
RG01	36.71
RG02	20.98
RG03	25.50
RG04	34.33
Average	29.38
WWTP Rain	34.74

Number of Overflows	
030 Liberty	0
031 Canton	0
032 Carew	0
040 Tiffany	1
050 IOPS	0

2016 Grit and Screenings Disposal

	Plant Grit tons	Plant Rags tons	Washburn tons	Clinton tons	CRI tons	Total tons
Jan	58.11	20.20	0.00	0.00	0.00	0.00
Feb	96.93	39.75	0.00	0.00	0.00	0.00
Mar	81.25	34.17	0.00	13.50	0.00	13.50
Apr	65.35	42.44	7.04	0.00	0.00	7.04
May	112.41	30.22	0.00	24.93	67.80	92.73
Jun	73.55	28.07	8.80	0.00	0.00	8.80
Jul	47.57	15.69	0.00	9.50	0.00	9.50
Aug	155.25	24.27	0.00	0.00	8.44	8.44
Sep	100.89	23.67	0.00	9.98	0.00	9.98
Oct	28.34	19.97	0.00	0.00	6.97	6.97
Nov	40.40	26.81	5.29	0.00	0.00	5.29
Dec	54.72	26.50	0.00	0.00	0.00	0.00
Avg	76.23	27.65	1.76	4.83	6.93	13.52
Total	914.77	331.76	21.13	57.91	83.21	162.25

3690 feet of the CRI was cleaned in 2016.

Appendix F – Infiltration and Inflow Reports

SPRINGFIELD WATER AND SEWER COMMISSION

POST OFFICE BOX 995
SPRINGFIELD, MASSACHUSETTS 01101-0995
413-452-1300

March 31, 2017

US Environmental Protection Agency
Discharge Monitoring Reports (OES4-SMR)
5 Post Office Square – Suite 100
Boston, MA 02109-3912

RE: NPDES Permit MA0101613 Requirements – Inflow and Infiltration (I/I)

To Whom it May Concern:

The Springfield Water and Sewer Commission (Commission) maintains and operates over 500 miles of sewers within its jurisdiction. Ongoing maintenance programs include video inspection, jetting, rodding, vacuuming, and other methods of cleaning and inspecting sanitary and combined sewers and manholes. As Inflow/Infiltration problems are found, during the course of operations and maintenance activities, the appropriate actions are taken.

Suez, in their role as the contract operator of the treatment facility, the Combined Sewer Overflows, and Flood Control Systems has conducted the annual inspections of the flood control/inflow structures on the combined sewer system as required by NPDES Permit #MA0103331. Suez also routinely monitors flow data recorded at the Springfield Regional Wastewater Treatment Plant and contributing communities and any irregular and/or increased flows are investigated.

The Commission has continued to advance its sewer assessment program as part of the CMOM component of our USEPA Administrative Consent Order (Docket No. 08-037) and as part of our CSO program. To that effect, the Commission has continued its comprehensive condition assessment of the collection system which includes cleaning, inspection, I/I evaluation, risk and consequence of failure evaluations, and flow metering programs. Findings are being appropriately addressed as short term and long term repair/replacement projects.

We continue to advance these programs to satisfy our NPDES, CMOM, and CSO requirements. Additional detailed information can be found in the 2016 CMOM and CSO reports submitted as required by NPDES Permit #MA0103331.

If there are any questions regarding this or any other matter, please contact this office at your earliest convenience.

Respectfully,

Springfield Water and Sewer Commission

By: Joshua D. Schimmel
Executive Director

CC: MADEP – Western Regional Office

TOWN OF AGAWAM
Department of Public Works
1000 Suffield Street • Agawam MA 01001
Tel (413) 821-0600 • Fax (413) 821-0631
Christopher J. Golba – Superintendent

February 19, 2017

Mr. Ryan C. Wingerter
Collection System Superintendent
Springfield Water and Sewer Commission
P.O. Box 995
Springfield, MA 01101-0995

Dear Mr. Wingerter:

The City of Agawam completed the separation of its sewer and drain systems in 2000. This accomplishment greatly reduced inflow into our sewer system and eliminated our combined sewer overflows.

The Department of Public Works continues to fund the plumbing inspector in the Water Departments budget which gives us some influence in his work. He is on the watch for cellar sump pump connections to the building sewer and in the past year noticed several such installations, which we were able to have removed. Also, all new houses are required to have foundation drains installed. These drains are not allowed to be connected to the sewer.

We have added an inflow/infiltration education section to our stormwater informational pamphlet. These pamphlets are sent out with the water bills to all the residents that are using Agawam's water system. In this pamphlet we will inform residents that stormwater connections to the sewer are improper because it burdens the Town with unnecessary costs in pumping and treating clean stormwater, and may cause SSO's in neighborhood streets. We will also refer to the city ordinance and inform property owners that the DPW is available to help aid in fixing these illegal connections.

The Sewer Department/Engineering Division continue to work together using our television equipment to inspect building sewers, sewer mains and drain lines for breaks and inflow. The Engineering Division is also working on mapping Agawam's stormwater system using GIS. The Town's drainage system has been essentially mapped on GIS and we continue to refine and add information as changes are discovered. If any inter-connections between the sewer and drainage systems are discovered during this investigation, they are dealt with in a prompt manner.

We continue to monitor the flow recordings from our wastewater pumping facilities and investigate any abnormalities for possible inflow/infiltration problems. We are looking into options with United Water for improving any existing faulty flow metering at our pump stations. This will better enable us to monitor the sewer system before, during and after storm events which will lead to improved data and assist in more accurately locating inflow/infiltration connections in the future.

Finally, and most importantly, we have signed a contract with Tighe & Bond in the amount of $259,900 to perform an Infiltration/Inflow Analysis. I've attached a copy of the contract for your records.

Should you have any questions regarding these issues please phone me at 413-821-0623.

Very truly yours,

Christopher J. Golba, Superintendent
Dept. of Public Works

Cc: Michelle Chase, PE, Town Engineer
John Decker, Deputy Superintendent
Mickey Nowak, United Water

approved

TR-2016-53

A RESOLUTION AUTHORIZING THE BORROWING AND APPROPRIATION IN THE AMOUNT OF $259,900.00 FOR ENGINEERING SERVICES NECESSARY TO PERFORM AN INFILTRATION INFLOW ANALYSIS

(Sponsored by: Mayor Richard A Cohen)

WHEREAS, *Infiltration* is the extraneous water that enters a sewer system from the ground through pipe defects (cracks, holes, etc.), pipe joints, connections, manhole walls, etc. and, in most cases, infiltration is directly related to the elevation of the groundwater table in relation to the pipe invert; and

WHEREAS, *Inflow* is the extraneous water discharged into a sewer system from a distinct source, such as sump pumps, roof leaders, cellar drains, foundation drains, surface drains, drains from springs and swampy areas, manhole covers, catch basins, cross-connections with storm drains, cooling water discharges, etc. and, in most cases, directly related to the quantity and intensity of rainfall; and

WHEREAS, an Infiltration/Inflow Analysis, (I/I Analysis) is necessary to conform to the 314 CMR 12.04(2) requirement that the City of Agawam develop and implement an ongoing plan to control infiltration and inflow into its water and sewer collection system; and

WHEREAS, 314 CMR 12.04(2)[c]1 specifically requires submittal of a completed I/I Analysis to MassDEP by December 31, 2017; and

WHEREAS, 314 CMR 12.03 (2) states that no major modification shall be made to a wastewater collection system without written approval of MassDEP; and

WHEREAS, it has been determined to be in the best interests of the City of Agawam and its residents engage engineering services necessary to perform the mandated I/I Analysis.

NOW THEREFORE, the **AGAWAM CITY COUNCIL** hereby resolves to authorize the following: That $259,900.00 is appropriated to pay the costs of engineering services necessary to perform the I/I analysis and to meet this appropriation, the Treasurer, with the approval of the Mayor, is authorized to borrow said amount under and pursuant to Chapter 44, Section 7(1) of the Massachusetts General Laws, or pursuant to any other enabling authority, and to issue bonds or notes of the town therefor.

Org & CC- TN Clk
CC - Council
CC - Auditor
CC - Treasurer
CC - DPW
CC - Law Dept.

Dated this 6th day of Sept, 2016.

PER ORDER OF THE AGAWAM CITY COUNCIL

James P. Cichetti, President

APPROVED AS TO FORM AND LEGALITY

Patrick M. Toney, City Solicitor

MAYORAL ACTION

Received this 7th day of September, 2016 from Council Clerk.

Signed by Council President this 10th day of Sept, 2016.

APPROVAL OF LEGISLATION

By the powers vested in me pursuant to Article 3, Section 3-6 of the Agawam Charter, as amended, I hereby approve the passage of the above legislation on this 7th day of September, 2016.

Richard A. Cohen

Richard A. Cohen, Mayor

DISAPPROVAL OF LEGISLATION

By the powers vested in me pursuant to Article 3, Section 3-6 of the Agawam Charter, as amended, I hereby veto the passage of the above legislation on this _____ day of _____, 2016 for the following reason(s):

_____

_____

_____

_____

Richard A. Cohen, Mayor

RETURN OF LEGISLATION TO COUNCIL CLERK

Returned to Council Clerk this 7th day of September, 2016.

A-0914035B
May 28, 2015
Revised July 20, 2016

Mr. Christopher J. Golba, Superintendent
Department of Public Works
1000 Suffield Street
Agawam, MA 01001

Re: **Infiltration/Inflow Analysis**

Dear Mr. Golba:

In accordance with your request, we are pleased to submit this proposal to provide engineering services for the performance of an Infiltration/Inflow (I/I) Analysis within the Town's wastewater collection system. Wastewater entering the collection system is comprised of residential sanitary flow, non-residential sanitary flow, infiltration and inflow. Infiltration and inflow are defined below:

- *Infiltration* - is the extraneous water that enters a sewer system from the ground through pipe defects (cracks, holes, etc.), pipe joints, connections, manhole walls, etc. Infiltration is, in most cases, directly related to the elevation of the groundwater table in relation to the pipe invert.

- *Inflow* – Inflow is the extraneous water discharged into a sewer system from a distinct source, such as sump pumps, roof leaders, cellar drains, foundation drains, surface drains, drains from springs and swampy areas, manhole covers, catch basins, cross-connections with storm drains, cooling water discharges, etc. Inflow is, in most cases, directly related to the quantity and intensity of rainfall.

In general, I/I negatively affects wastewater collection and treatment systems. Impacts of I/I include elevated wastewater flows that: (1) reduce available sewer capacity; (2) negatively affect wastewater treatment performance; and (3) lead to increased operation and maintenance costs. Under periods of elevated flows, potential impacts of I/I include surcharging, overflows, basement backups and treatment system washouts. These challenges increase public health risks and can result in negative environmental impacts.

This proposal is intended to satisfy the requirements of Comment 5 from MassDEP's February 8, 2015 letter, which requires that the Town of Agawam complete an I/I Analysis by December 31, 2017, in accordance with 314 CMR 12.04 (2) [c] 1. The I/I Analysis is typically the first study phase of an I/I reduction program. The purpose of this I/I analysis is to identify sewer drainage areas that have excessive infiltration or inflow. Further investigations are typically recommended through a Sewer System Evaluation Survey (SSES) within the sewer drainage areas found to have excessive I/I. An SSES is the second study phase of an I/I reduction program and is performed to identify and locate specific I/I sources.

Background

The Town of Agawam owns and maintains approximately 120 miles of gravity sewer mains varying in size from 8-inch diameter to 30-inch diameter and 13 wastewater pump stations. The Town's pump stations are operated and maintained by United Water. All of Agawam's wastewater flow is conveyed to either the Main Street Pump Station (at HP Hood), the River Road Pump Station, or the School Street Pump Station. These pump stations discharge the

Town's wastewater flows to the Springfield Regional Wastewater Treatment Facility (SRWWTF) at Bond's Island.

Wastewater flows from Agawam to the SRWWTF in 2013 were as follows:

TABLE 1
2013 Measured Flows vs. Inter-municipal Agreement Limits

Flow Category	2013 Measured Flows (mgd)	Inter-municipal Agreement Limits (mgd)
Average Daily Flow	2.7	6.1
Maximum Daily Flow	5.6	---
Peak Hourly Flow	11.4	15.4

The flow values illustrate that I/I is present in Agawam's collection system.

Scope of Services

The engineering services that will be provided for the project are as follows and are generally in accordance with the MassDEP's Guidelines for performing I/I Analyses entitled *Guidelines for Performing Infiltration/Inflow Analyses and Sewer System Evaluation Survey*, revised January 1993.

Task 1.0 Inventory of Existing Conditions

1.1. Kickoff meeting – We will attend a kickoff meeting with the Town to review the project scope and obtain Town input.

1.2. Review available information – We will review information available from the Town regarding the existing sewer system, including sewer maps, construction plans, reports, local mapping, water consumption data and wastewater flow records. In addition, we will conduct interviews with Town staff.

1.3. Limited Manhole Inspections – We will conduct a limited inspection program to determine the general condition of the sewer system. We propose to inspect 300 manholes during this evaluation (approximately 10% of the total number of manholes in the sewer system).

1.4. Pump Station Data Review – We will review flow and run time data available from the Town's wastewater pump stations in order to evaluate within which pump station service areas I/I is most significant.

Task 2.0 Map Development

We propose to update the Town's GIS wastewater collection system map based on data collected during the study. In addition, mapping will be developed to illustrate the I/I tasks performed during the evaluation and the study findings.

Task 3.0 Flow Monitoring

We propose to divide the Town's sewer system into 31 sub-areas and to install a continuous flow meter to measure wastewater flow at the outlet of each sub-area over a 10-week period during the spring of 2016 (see attached map). Drainage area sizes are based on the

MassDEP I/I Guidelines, which suggest that they range from approximately 10,000 to 30,000 feet of sewer. We will utilize the services of a sub-consultant to install the flow meters and provide weekly maintenance of the flow meters during the monitoring period.

Instantaneous flow data will also be collected to supplement the continuous flow data obtained. In particular, instantaneous flow monitoring is proposed to quantify infiltration within smaller areas where continuous flow monitoring may not be warranted. We have included two nights of instantaneous flow data collection in our Scope of Services.

Task 4.0 Rainfall Monitoring

One tipping bucket style rain gauge will be installed within the Town and will measure rainfall concurrent with continuous wastewater flow monitoring in order to determine the impact of rainfall of varying amounts and intensity on sewer system flows. Similar to the continuous flow monitoring, we will utilize the services of a sub-consultant to install and maintain the rain gauge.

Task 5.0 Groundwater Monitoring

We will monitor groundwater levels weekly in each sub-area (31 total) concurrent with continuous wastewater flow monitoring in order to determine the impact of changes in groundwater level on sewer system flows. Groundwater levels will be monitored using 31 piezometers installed by our sub-consultant through the walls of key manholes in each sub-area. The groundwater gauging locations will be selected in an effort to obtain representative information on groundwater levels throughout the sewer system.

Task 6.0 Data Evaluation

We will evaluate the flow, rainfall, groundwater and manhole inspection data collected during the study in order to quantify I/I in each sub-area and to identify those sub-areas in which infiltration and inflow are excessive. The sub-areas will then be ranked based on infiltration rates and inflow rates.

Task 7.0 Draft Report

We will prepare a draft report documenting the tasks performed during this evaluation and the results of the I/I evaluation. In addition, recommendations for follow up I/I investigations through a Sewer System Evaluation Survey (SSES) will be provided. The recommendations will include a detailed scope of SSES work.

Task 8.0 Workshop

A workshop will be held with the Town to present the results of the draft report and obtain Town input.

Task 9.0 Final Report

We will finalize the draft report based on input received from the Town during the project workshop.

Services Not Included In Scope

The following services are not included in our proposed scope of services. If these services are required, we will submit a scope and anticipated fee for these additional services.

- Traffic control required during field investigation activities

Fee

Tighe & Bond will perform these services for a not to exceed fee of $259,900. These services will be invoiced at the Company's standard billing rates. Reimbursable expenses performed by other than Tighe & Bond employees, such as subcontractors, materials purchased directly for this project, and permitting fees will be invoiced at cost plus ten percent. Reimbursable expenses such as in-house field supplies and equipment rental, tolls and parking, overnight mailings and bulk notification mailings, and in-house printing shall be invoiced at cost or unit costs as applicable. Tighe & Bond does not charge clients for items such as regular mailings of project documents, telephone or fax communications or computer usage. In the event that the scope of work is increased for any reason, the limiting fee to complete the work shall be mutually revised by written amendment. Our attached Terms and Conditions is part of this letter agreement.

TABLE 1
Estimated Engineering Services Costs

Task	Total Labor Hours	Labor Costs	Expenses	Total Budget
1–Inventory of Existing Conditions	82	$10,600	$16,700	$27,300
2–Map Development	47	$5,000	$0	$5,000
3-Flow Monitoring	104	$11,700	$152,800	$164,500
4-Rainfall Monitoring	17	$2,100	$1,000	$3,100
5-Groundwater Monitoring	23	$2,700	$4,300	$7,000
6-Data Evaluation	206	$25,200	$0	$25,200
7-Draft Report	128	$17,000	$500	$17,500
8-Workshop	16	$2,600	$0	$2,600
9-Final Report	56	$7,200	$500	$7,700
Total	**679**	**$84,100**	**$175,800**	**$259,900**

Schedule

The usefulness of an I/I study is dependent on obtaining good quality I/I flow metering data. As such, I/I Analysis field work is typically initiated in the spring when groundwater levels and, correspondingly, infiltration is typically highest. We are prepared to begin this project in the summer of 2016. Once the field investigation data has been collected and received, we anticipate that the data evaluation and reporting can be completed within 6 months.

If you have any questions, please call.

Very truly yours,

TIGHE & BOND, INC.

Todd M. Brown

Todd M. Brown, P.E.
Vice President

IN WITNESS WHEREOF, the parties hereunto have signed this Contract as a sealed instrument on this 21 day of September, 2016

TOWN OF AGAWAM

By: _____
Richard A Cohen; Mayor

By: _____
Christopher J. Golba, DPW Superintendent

Acct# 34752 52000

By: _____
Jennifer Bonfiglio;
Chief Procurement Officer

By: _____
Patrick Toney; Town Solicitor
Certified as to Form and Legality

By: _____
Cheryl St. John; Town Auditor

34752 52000

THE VENDOR

By: _____
Signature of Vendor, must be Corporate Officer

Tighe & Bond, Inc.
Name of Vendor

Vice President
Title of Vendor; must be Corporate Officer

53 Southampton Road
Street Address

Westfield, MA 01085
Town, State and Zip

04-2821431
Tax ID or Social Security No.

FOR CORPORATIONS ONLY:

By: _____
Clerks' Signature

Robert Belitz, Chief Financial Officer
Print or Type Clerk's Name

CERTIFICATION OF SELLER: Pursuant to M.G.L. c.62(c), sec.49 (a), the individual signing this Contract on behalf of the Contractor, herby certifies, under the penalties of perjury that to the best of their knowledge and belief the Contractor has complied with all laws of the Commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support.

Authorized Signature of Seller:

J:\A\A0914\PROP\A0914-0358 I-I Analysis\I-I Analysis proposal.doc

"CLIENT" is defined in the acceptance line of the accompanying proposal letter or the name the proposal is issued to; Tighe & Bond, Inc. is hereby referenced as "ENGINEER".

1. SCHEDULE OF PAYMENTS

1.1 Invoices will generally be submitted once a month for services performed during the previous month. Payment will be due within 30 days of invoice date. Monthly payments to ENGINEER shall be made on the basis of invoices submitted by ENGINEER and approved by CLIENT. If requested by CLIENT, monthly invoices may be supplemented with such supporting data as reasonably requested to substantiate them.

1.2 In the event of a disagreement as to billing, the CLIENT shall pay the agreed portion.

1.3 Interest will be added to accounts in arrears at the rate of one and one-half (1.5) percent per month (18 percent per annum) or the maximum rate allowed by law, whichever is less, of the outstanding balance. In the event counsel is retained to obtain payment of an outstanding balance, CLIENT will reimburse ENGINEER for all reasonable attorney's fees and court costs.

1.4 If CLIENT fails to make payment in full within 30 days of the date due for any undisputed billing, ENGINEER may, after giving seven days' written notice to CLIENT, suspend services and retain work product until paid in full, including interest. In the event of suspension of services, ENGINEER will have no liability to CLIENT for delays or damages caused by such suspension.

2. SUCCESSORS AND ASSIGNS

2.1 CLIENT and ENGINEER each binds itself, its partners, successors, assigns and legal representatives to the other parties to this Agreement and to the partners, successors, assigns and legal representatives of such other parties with respect to all covenants of this Agreement. ENGINEER shall not assign, sublet or transfer its interest in this Agreement without the written consent of CLIENT, which consent shall not be unreasonably withheld.

2.2 This Agreement represents the entire and integrated Agreement between CLIENT and ENGINEER and supersedes all prior negotiations, representations or Agreements, whether written or oral. This Agreement may be amended only by written instrument signed by both CLIENT and ENGINEER.

2.3 Nothing contained in this Agreement shall create a contractual relationship or cause of action in favor of a third party against CLIENT or against ENGINEER.

3. STANDARD OF CARE

3.1 In performing professional services, ENGINEER will use that degree of care and skill ordinarily exercised under similar circumstances by members of the profession practicing in the same or similar locality.

4. TERMINATION

4.1 This Agreement may be terminated by either party upon seven days' written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof through no fault of the terminating party. In addition, CLIENT may terminate this Agreement for its convenience at any time by giving written notice to ENGINEER. In the event of any termination, CLIENT will pay ENGINEER for all services rendered and reimbursable expenses incurred under the Agreement to the date of termination and all services and expenses related to the orderly termination of this Agreement.

5. RECORD RETENTION

5.1 ENGINEER will retain pertinent records relating to the services performed for the time required by law, during which period the records will be made available upon reasonable request and upon reimbursement for any applicable retrieval/copying charges.

5.2 Samples - All soil, rock and water samples will be discarded 30 days after submission of ENGINEER's report, unless mutually agreed otherwise or unless ENGINEER's customary practice is to retain for a longer period of time for the specific type of services which ENGINEER has agreed to perform. Upon request and mutual agreement regarding applicable charges, ENGINEER will ship, deliver and/or store samples for CLIENT.

6. OWNERSHIP OF DOCUMENTS

6.1 All reports, drawings, specifications, computer files, field data, notes, and other documents, whether in paper or electronic format or otherwise ("documents"), are instruments of service and shall remain the property of ENGINEER, which shall retain all common law, statutory and other reserved rights including, without limitation, the copyright thereto. CLIENT's payment to ENGINEER of the compensation set forth in the Agreement shall be a condition precedent to the CLIENT's right to use documents prepared by ENGINEER.

6.2 Documents provided by ENGINEER are not intended or represented to be suitable for reuse by CLIENT or others on any extension or modification of this project or for any other projects or sites. Documents provided by ENGINEER on this project shall not, in whole or in part, be disseminated or conveyed to any other party, nor used by any other party, other than regulatory agencies, without the prior written consent of ENGINEER. Reuse of documents by CLIENT or others on extensions or modifications of this project or on other sites or use by others on this project, without ENGINEER's written permission and mutual agreement as to scope of use and as to compensation, if applicable, shall be at the user's sole risk, without liability on ENGINEER's part, and CLIENT agrees to indemnify and hold ENGINEER harmless from all claims, damages, and expenses, including attorney's fees, arising out of such unauthorized use or reuse.

6.3 Electronic Documents - ENGINEER cannot guarantee the authenticity, integrity or completeness of data files supplied in electronic format. If ENGINEER provides documents in electronic format for CLIENT's convenience, CLIENT agrees to waive any and all claims against ENGINEER resulting in any way from the unauthorized use, alteration, misuse or reuse of the electronic documents, and to defend, indemnify, and hold ENGINEER harmless from any claims, losses, damages, or costs, including attorney's fees, arising out of the unauthorized use, alteration, misuse or reuse of any electronic documents provided to CLIENT.

6.4 Electronic Data Bases – In the event that ENGINEER prepares electronic data bases, geographical information system (GIS) deliverables, or similar electronic documents, it is acknowledged by CLIENT and ENGINEER that such project deliverables will be used and perhaps modified by CLIENT and that ENGINEER's obligations are limited to the deliverables and not to any subsequent modifications thereof. Once CLIENT accepts the delivery of maps, databases, or similar documents developed by ENGINEER, ownership is passed to CLIENT. ENGINEER will retain the right to use the developed data and will archive the data for a period of three years from the date of project completion.

7. INSURANCE

7.1 ENGINEER will retain Workmen's Compensation Insurance, Professional Liability Insurance with respect to liabilities arising from negligent errors and omissions, Commercial General Liability Insurance, Excess Liability, and Automobile Liability during this project. ENGINEER will furnish certificates at CLIENT's request.

7.2 Risk Allocation - For any claim, loss, damage, or liability resulting from error, omission, or other professional negligence in the performance of services, the liability of ENGINEER to all claimants with respect to this project will be limited to an aggregate sum not to exceed $50,000 or ENGINEER's compensation for consulting services, whichever is greater.

7.3 Damages – Notwithstanding any other provision of this Agreement, and to the fullest extent permitted by law, neither CLIENT nor ENGINEER, their respective officers, directors, partners, employees, contractors or subconsultants shall be liable to the other or shall make any claim for any incidental, indirect or consequential damages arising out of or connected in any way to the project or to this Agreement. This mutual waiver of certain damages shall include, but is not limited to, loss of use, loss of profit, loss of business, loss of income, loss of reputation and any other consequential damages that may be incurred from any cause of action including negligence, strict liability, breach of contract and breach of strict or implied warranty. Both CLIENT and ENGINEER shall require similar waivers of consequential damages protecting all the entities or persons named herein in all contracts and subcontracts with others involved in this project.

8. INDEMNIFICATION AND DISPUTE RESOLUTION

8.1 ENGINEER agrees, to the fullest extent permitted by law, to indemnify and hold CLIENT harmless from any damage, liability or cost to the extent caused by ENGINEER's negligent acts, errors or omissions in the performance of professional services under this Agreement and those of its subconsultants or anyone for whom ENGINEER is legally liable. ENGINEER is not obligated to indemnify CLIENT in any manner whatsoever for CLIENT's own negligence.

8.2 CLIENT agrees, to the fullest extent permitted by law, to indemnify and hold ENGINEER harmless from any damage, liability or cost to the extent caused by CLIENT's negligent acts, errors or omissions in the performance of this Agreement or anyone for whom CLIENT is legally liable. CLIENT is not obligated to indemnify ENGINEER in any manner whatsoever for ENGINEER's own negligence.

8.3 CLIENT agrees that any and all limitations of ENGINEER's liability, waivers of damages by CLIENT to ENGINEER shall include and extend to those individuals and entities ENGINEER retains for performance of the services under this Agreement, including but not limited to ENGINEER's officers, partners, and employees and their heirs and assigns, as well as ENGINEER's subconsultants and their officers, employees, and heirs and assigns.

8.4 In the event of a disagreement arising out of or relating to this Agreement or the services provided hereunder, CLIENT and ENGINEER agree to attempt to resolve any such disagreement through direct negotiations between senior, authorized representatives of each party. If any disagreement is not resolved by such direct negotiations, CLIENT and ENGINEER further agree to consider using mutually acceptable non-binding mediation service in order to resolve any disagreement without litigation.

9. SITE ACCESS

9.1 Right of Entry - Unless otherwise agreed, CLIENT will furnish right-of-entry on the land for ENGINEER to make any surveys, borings, explorations, tests or similar field investigations. ENGINEER will take reasonable precautions to limit damage to the land from use of equipment, but the cost for restoration of any damage that may result from such field investigations is not included in the agreed compensation for ENGINEER. If restoration of the land is required to its former condition, upon mutual agreement this may be accomplished as a reimbursable additional service at cost plus ten percent.

9.2 Damage to Underground Structures - Reasonable care will be exercised in locating underground structures in the vicinity of proposed subsurface explorations. This may include contact with the local agency coordinating subsurface utility information and/or a review of plans provided by CLIENT or CLIENT representatives for the site to be investigated. ENGINEER shall be entitled to rely upon any information or plans prepared or made available by others. In the absence of confirmed underground structure locations, CLIENT agrees to accept the risk of damage and costs associated with repair and restoration of damage resulting from the exploration work.

10. OIL AND HAZARDOUS MATERIALS

10.1 If, at any time, evidence of the existence or possible existence of asbestos, oil, or other hazardous materials or substances is discovered, ENGINEER reserves the right to renegotiate the terms and conditions of this Agreement, the fees for ENGINEER's services and ENGINEER's continued involvement in the project. ENGINEER will notify CLIENT as soon as practical if evidence of the existence or possible existence of such hazardous materials or substances is discovered.

10.2 The discovery of the existence or possible existence of hazardous materials or substances may make it necessary for ENGINEER to take accelerated action to protect human health and safety, and/or the environment. CLIENT agrees to compensate ENGINEER for the cost of any and all measures that in its professional opinion are appropriate to preserve and/or protect the health and safety of the public, the environment, and/or ENGINEER's personnel. To the full extent permitted by law, CLIENT waives any claims against ENGINEER and agrees to indemnify, defend and hold harmless ENGINEER from any and all claims, losses, damages, liability, and costs, including but not limited to cost of defense, arising out of or in any way connected with the existence or possible existence of such hazardous materials substances at the site.

11. SUBSURFACE INVESTIGATIONS

11.1 In soils, groundwater, and other subsurface investigations, conditions may vary significantly between successive test points and sample intervals and at locations other than where observations, exploration, and investigations have been made. Because of the variability of conditions and the inherent uncertainties in subsurface evaluations, changed or unanticipated underground conditions may occur that may affect overall project costs and/or execution. These variable conditions and related impacts on cost and project execution are not the responsibility of ENGINEER.

12. FEDERAL AND STATE REGULATORY AGENCY AUDITS

12.1 For certain services rendered by ENGINEER, documents filed with federal and state regulatory agencies may be audited after the date of filing. In the event that CLIENT's project is selected for an audit, CLIENT agrees to compensate

ENGINEER for time spent preparing for and complying with an agency request for information or interviews in conjunction with such audit. CLIENT will be notified at the time of any such request by an agency, and ENGINEER will invoice CLIENT based on its standard billing rates in effect at the time of the audit.

13. CLIENT's RESPONSIBILITIES

13.1 Unless otherwise stated in the Agreement, CLIENT will obtain, arrange, and pay for all notices, permits, and licenses required by local, state, or federal authorities; and CLIENT will make available the land, easements, rights-of-way, and access necessary for ENGINEER's services or project implementation.

13.2 CLIENT will examine ENGINEER's studies, reports, sketches, drawings, specifications, proposals, and other documents and communicate promptly to ENGINEER in the event of disagreement regarding the contents of any of the foregoing. CLIENT, at its own cost, will obtain advice of an attorney, insurance counselor, accountant, auditor, bond and financial advisors, and other consultants as CLIENT deems appropriate; and render in writing decisions required by CLIENT in a timely manner.

14. OPINIONS OF COST, FINANCIAL ANALYSES, ECONOMIC FEASIBILITY PROJECTIONS, AND SCHEDULES

14.1 ENGINEER has no control over cost or price of labor and materials required to implement CLIENT's project, unknown or latent conditions of existing equipment or structures that may affect operation or maintenance costs, competitive bidding procedures and market conditions, time or quality of performance by operating personnel or third parties, and other economic and operational factors that may materially affect the ultimate project cost or schedule. Therefore, ENGINEER makes no warranty, expressed or implied, that CLIENT's actual project costs, financial aspects, economic feasibility, or schedules will not vary from any opinions, analyses, projections, or estimates which may be provided by ENGINEER. If CLIENT wishes additional information as to any element of project cost, feasibility, or schedule, CLIENT at its own cost will employ an independent cost estimator, contractor, or other appropriate advisor.

15. CONSTRUCTION PHASE PROVISIONS

15.1 CLIENT and Contractor - The presence of ENGINEER's personnel at a construction site, whether as onsite representatives or otherwise, does not make ENGINEER or ENGINEER's personnel in any way responsible for the obligations, duties, and responsibilities of the CLIENT and/or the construction contractors or other entities, and does not relieve the construction contractors or any other entity of their respective obligations, duties, and responsibilities, including, but not limited to, all construction methods, means, techniques, sequences, and procedures necessary for coordinating and completing all portions of the construction work in accordance with the construction contract documents and for providing and/or enforcing all health and safety precautions required for such construction work.

15.2 Contractor Control - ENGINEER and ENGINEER's personnel have no authority or obligation to monitor, to inspect, to supervise, or to exercise any control over any construction contractor or other entity or their employees in connection with their work or the health and safety precautions for the construction work and have no duty for inspecting, noting, observing, correcting, or reporting on health or safety deficiencies of the construction contractor(s) or other entity or any other persons at the site except ENGINEER's own personnel.

15.3 On-site Responsibility - The presence of ENGINEER's personnel at a construction site is for the purpose of providing to CLIENT an increased degree of confidence that the completed construction work will conform generally to the construction documents and that the design concept as reflected in the construction documents generally has been implemented and preserved by the construction contractor(s). ENGINEER neither guarantees the performance of the construction contractor(s) nor assumes responsibility for construction contractor's failure to perform work in accordance with the construction documents.

15.4 Payment Recommendations - Recommendations by ENGINEER to CLIENT for periodic construction progress payments to the construction contractor(s) are based on ENGINEER's knowledge, information, and belief from selective observation that the work has progressed to the point indicated. Such recommendations do not represent that continuous or detailed examinations have been made by ENGINEER to ascertain that the construction contractor(s) have completed the work in exact accordance with the construction documents; that the final work will be acceptable in all respects; that ENGINEER has made an examination to ascertain how or for what purpose the construction contractor(s) have used the moneys paid; that title to any of the work, materials, or equipment has passed to CLIENT free and clear of liens, claims, security interests, or encumbrances; or that there are no other matters at issue between CLIENT and the construction contractors that affect the amount that should be paid.

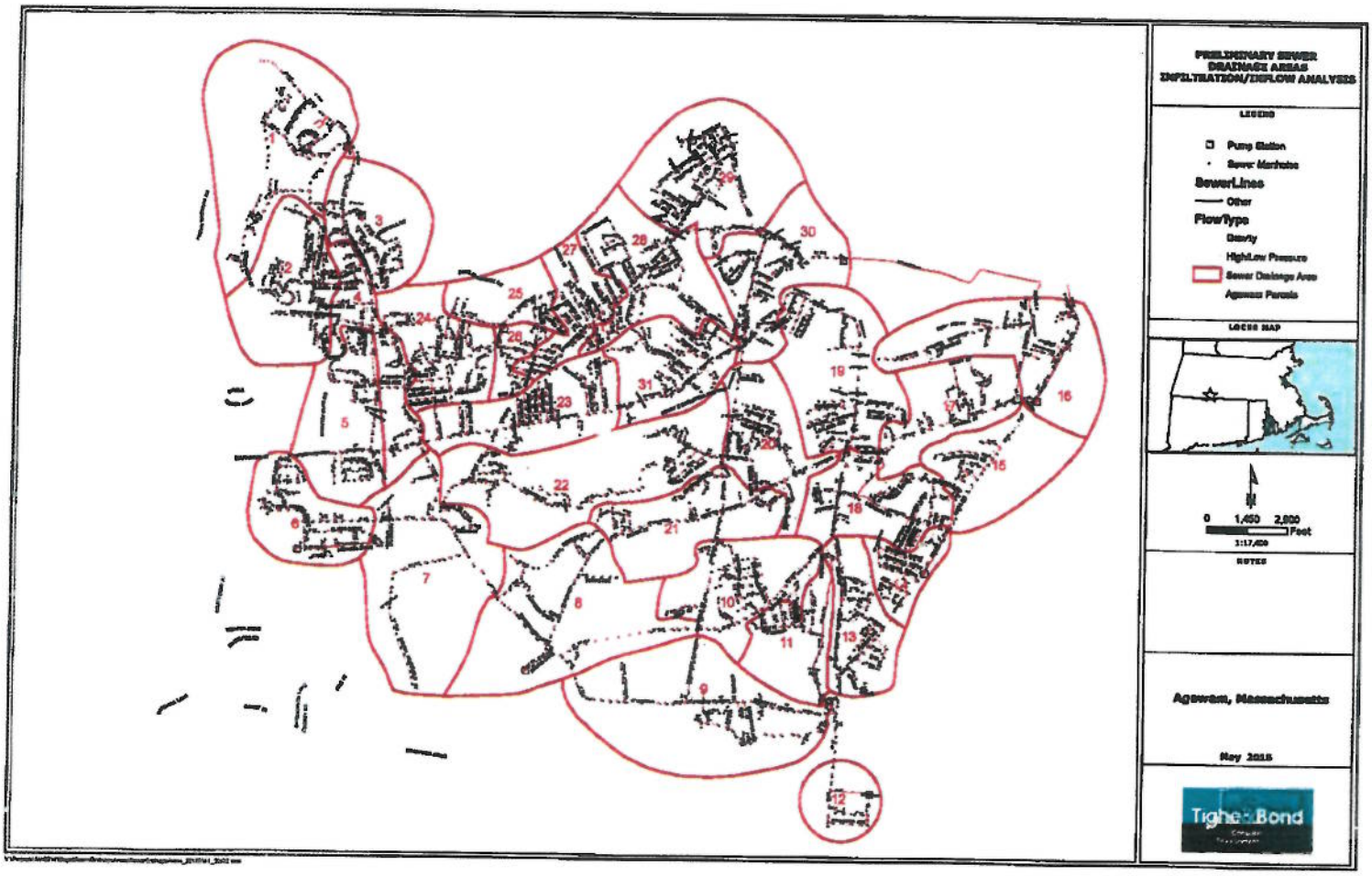
15.5 Record Drawings - Record drawings, if required as part of ENGINEER's agreed scope of work, will be prepared, in part, on the basis of information compiled and furnished by others, and may not always represent the exact location, type of various components, or exact manner in which the project was finally constructed. ENGINEER is not responsible for any errors or omissions in the information from others that are incorporated into the record drawings.

16. DESIGN WITHOUT CONSTRUCTION PHASE SERVICES

The following provisions shall be applicable should the ENGINEER not provide Construction Phase Services in connection with the PROJECT:

16.1 It is understood and agreed that the ENGINEER's Scope of Services under this proposal does not include project observation or review of the Contractor's performance or any other construction phase services, and that such services will be provided by the CLIENT or others. The CLIENT assumes all responsibility for interpretation of the Contract Documents and for construction observation, and the CLIENT waives any claims against the ENGINEER that may be in any way connected thereto.

16.2 In addition, the client agrees, to the fullest extent permitted by law, to indemnify and hold harmless the ENGINEER, its officers, directors, employees and subconsultants (collectively, ENGINEER) against all damages, liabilities or costs, including reasonable attorney's fees and defense costs, arising out of or in any way connected with the performance of such services by other persons or entities and from any and all claims arising from modifications, clarifications, interpretations, adjustments or changes made to the Contract Documents to reflect changed field or other conditions, except for claims arising from the sole negligence or willful misconduct of the ENGINEER.


PRELIMINARY SEWER
DRAINAGE AREAS
INFILTRATION/INFLOW ANALYSIS
LEGEND
Pump Station
Sewer Manhole
SewerLines
Other
FlowType
Gravity
High/Low Pressure
Sewer Drainage Area
Agawam Parcels
LOCUS MAP
0 1,400 2,800
Feet
1:17,400
NOTES
Agawam, Massachusetts
May 2015
Tighe&Bond

CITY OF CHICOPEE

DEPARTMENT OF PUBLIC WORKS

Jeffrey A. Neece
Superintendent

William J. Wood
Chief Operator

Quinn T. Lonczak
Project Supervisor

Mr. Paul Nietupski
Massachusetts Department of Environmental Protection, Western Regional Office
436 Dwight Street
Springfield, MA 01103

Re: **Regulation 314 CMR 12.00 – Infiltration/Inflow Requirements**
City of Chicopee

Dear Mr. Nietupski:

We are sending this letter, on behalf of the City of Chicopee to request concurrence on the City's approach to complying with the infiltration/inflow (I/I) requirements described in Massachusetts regulation 314 CMR 12.00 – Operation, Maintenance and Pretreatment Standards for Wastewater Treatment Works and Indirect Dischargers.

314 CMR 12.00 requires that all sewer system authorities develop and implement an ongoing plan to control I/I to their sewer system. 314 CMR 12.00 indicates that the plan shall include:

1. An ongoing program to identify and mitigate sources of I/I, in order to prevent all unauthorized discharges of wastewater.

2. An inflow identification and control program for disconnecting public and private sources of illegal inflow.

3. A phased evaluation of the sewer system, in accordance with MassDEP I/I Guidelines and as described below, unless otherwise required by an enforcement order.

    a. Perform an I/I Analysis (first study phase) by 12/31/17.

    b. Perform a Sewer System Evaluation Survey (SSES) (second study phase) in accordance with the I/I Analysis Report.

    c. Where a community has completed the above studies and is in the process of implementing recommendations, submit information on the status of the implementation program by 12/31/17.

Background

The City's sewerage system includes approximately 200 miles of pipe, more than 70% of which was combined as of the early 2000s, conveying both stormwater runoff and sanitary sewage. As shown in Figure 1, the City will have abated approximately 75% of its annual CSO volume by December 2016 upon completion of the North Willimansett, West Aldenville, and North Aldenville-Montgomery/Sheridan Street Sewer Separation Projects. Completion of the first phase of the Phase 5, or Chicopee Center Sewer Separation Project, which is anticipated to be completed by December 2017, will bring the City's cumulative percentage of annual CSO volume abated to 77%.

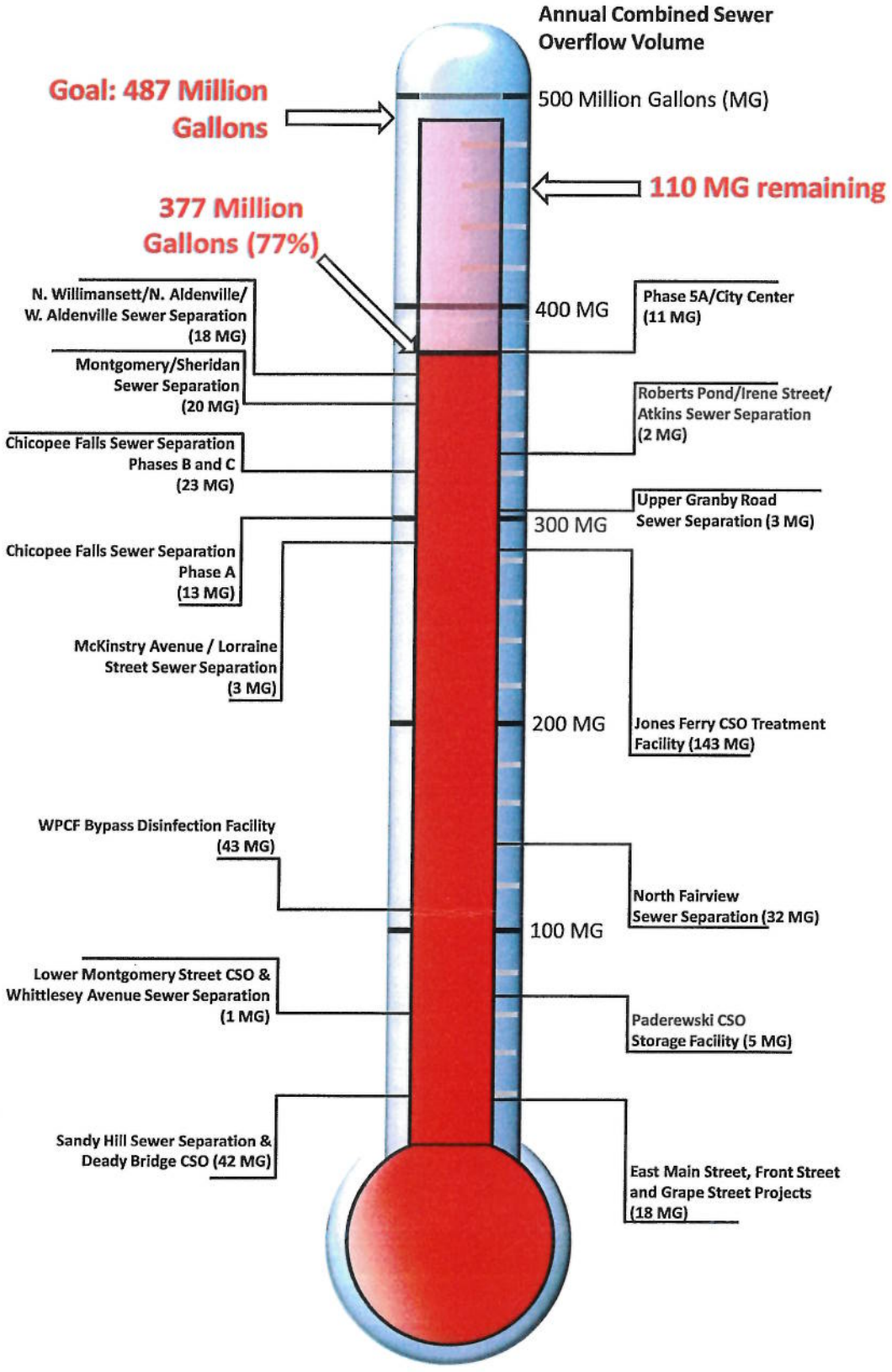

Annual Combined Sewer Overflow Volume
Goal: 487 Million Gallons
500 Million Gallons (MG)
110 MG remaining
377 Million Gallons (77%)
N. Willimansett/N. Aldenville/ W. Aldenville Sewer Separation (18 MG)
Montgomery/Sheridan Sewer Separation (20 MG)
Chicopee Falls Sewer Separation Phases B and C (23 MG)
Chicopee Falls Sewer Separation Phase A (13 MG)
McKinstry Avenue / Lorraine Street Sewer Separation (3 MG)
WPCF Bypass Disinfection Facility (43 MG)
Lower Montgomery Street CSO & Whittlesey Avenue Sewer Separation (1 MG)
Sandy Hill Sewer Separation & Deady Bridge CSO (42 MG)
400 MG
300 MG
200 MG
100 MG
Phase 5A/City Center (11 MG)
Roberts Pond/Irene Street/ Atkins Sewer Separation (2 MG)
Upper Granby Road Sewer Separation (3 MG)
Jones Ferry CSO Treatment Facility (143 MG)
North Fairview Sewer Separation (32 MG)
Paderewski CSO Storage Facility (5 MG)
East Main Street, Front Street and Grape Street Projects (18 MG)

Figure 1. CSO Abatement Progress Upon Completion of Phase 5A (In Progress)

The City has aggressively reduced I/I as part of the CSO Final Long Term Control Plan. The sewer separation work undertaken in the City has resulted in a significant reduction in I/I in the City's sanitary sewer pipes. This reduction in I/I is a result of replacing old, leaky pipes with new pipe with tight joints and eliminating inflow sources. This significant reduction in I/I is evidenced by a noticeable reduction in the total daily flows to the WPCF over the previous nine years, as shown in Figure 2. In 2007, the average annual flow was 8.7 MGD, with an average dry weather flow of 7.9 MGD. As of 2015, the average annual flow was 7.2 MGD, with an average dry weather flow of approximately 6.8 MGD. The City has seen a reduction in inflow and infiltration of almost 1.5 MGD, (a 17% reduction in overall flow), and a reduction in infiltration of 1.1 MGD (a 14% reduction in dry weather flow).

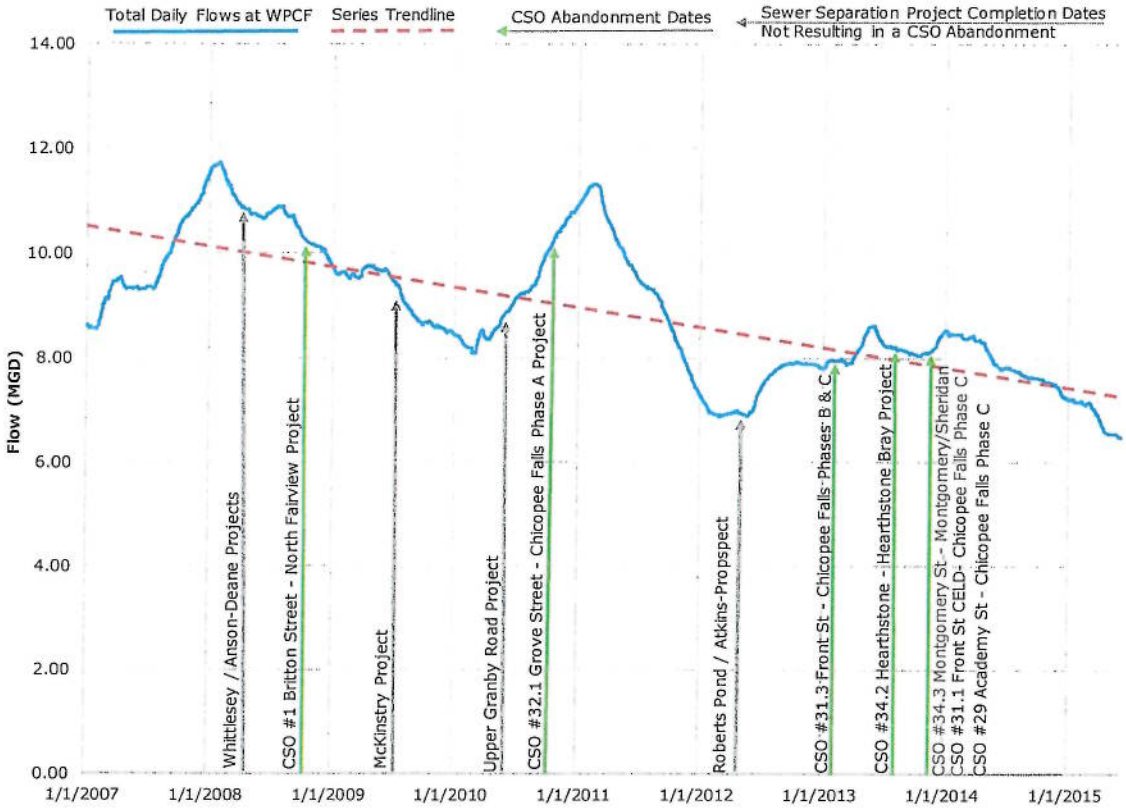


Figure 2. WPCF Flows 2007 – May 2016

Similarly, the City has observed a downward trend in flows to the WPCF Bypass Disinfection Facility, which receives flows in excess of the secondary treatment capacity of the treatment plant. The flows to the bypass disinfection facility since 2007 are shown in Figure 3. Figure 2 and Figure 3 show that the sewer separation projects are reducing both dry-weather and wet-weather flows to the WPCF (infiltration and inflow). Because average dry weather flows have decreased due to infiltration removal, more secondary treatment capacity has become available to treat peak flows.

The total influent flow to the Jones Ferry CSO Treatment Facility has also decreased between 2010 and 2016 in correlation with sewer separation projects reducing the amount of infiltration and inflow (Figure 4).

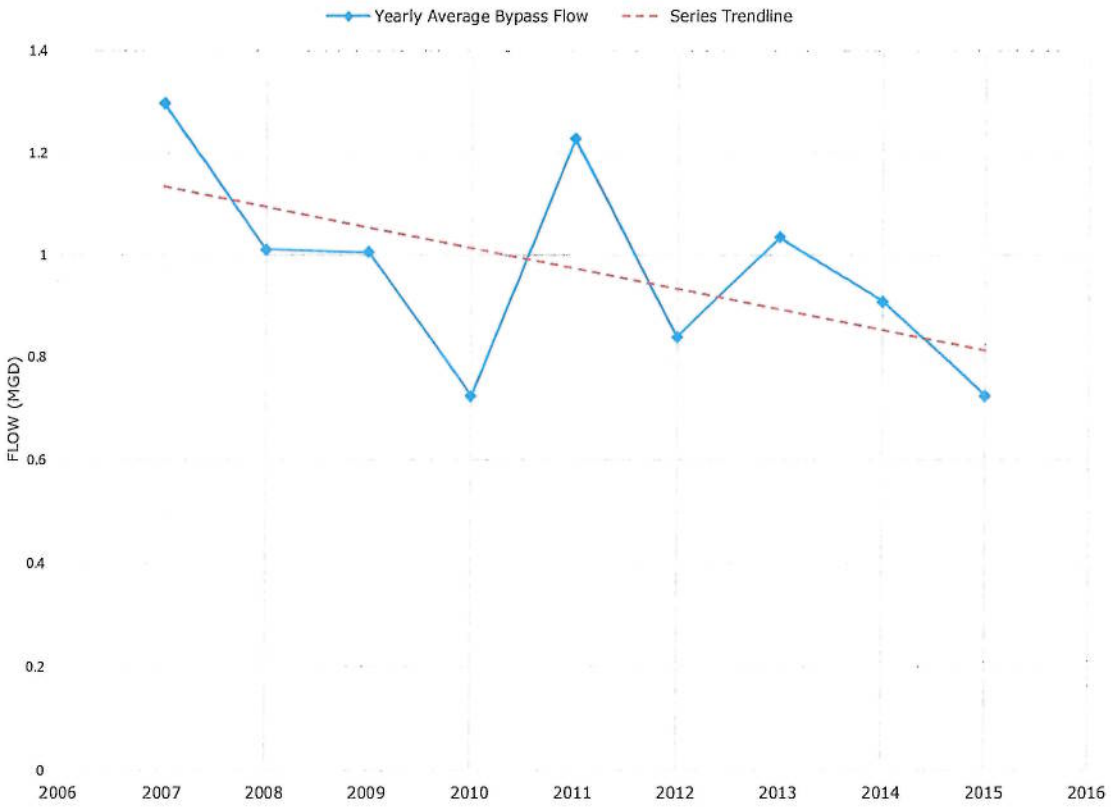


Figure 3. WPCF Bypass Disinfection Facility Flows

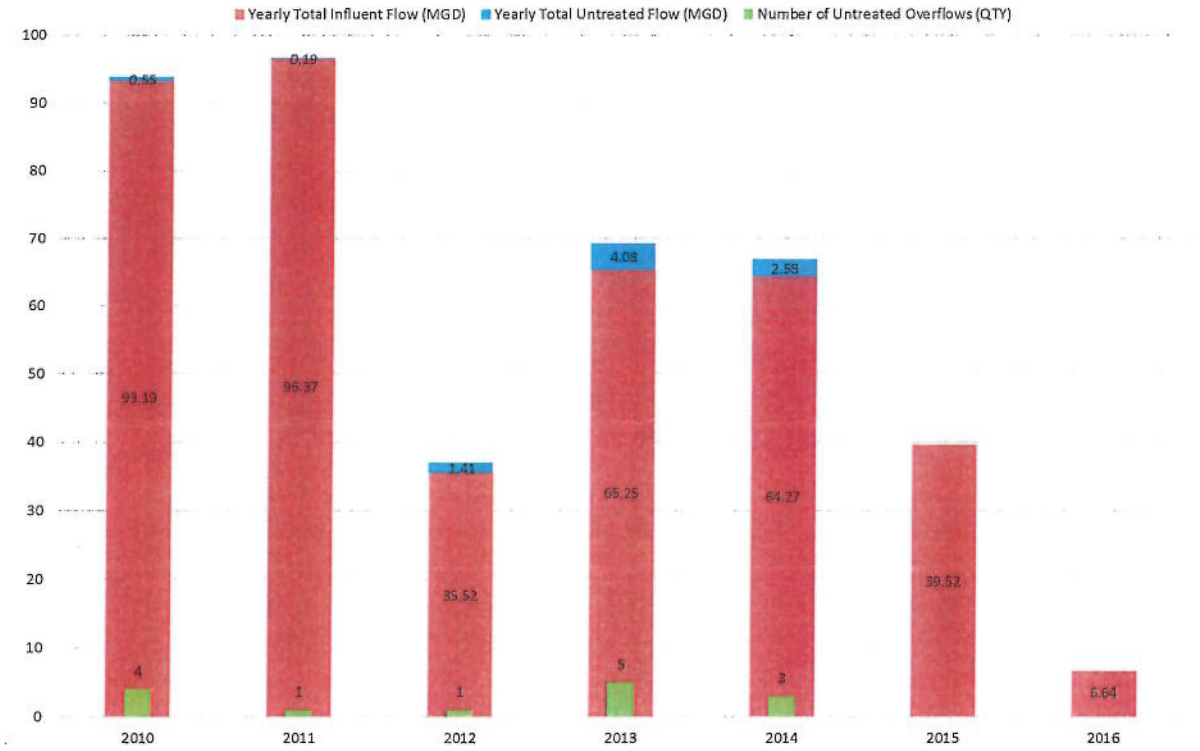


Figure 4. Jones Ferry CSO Facility Total Annual Flows

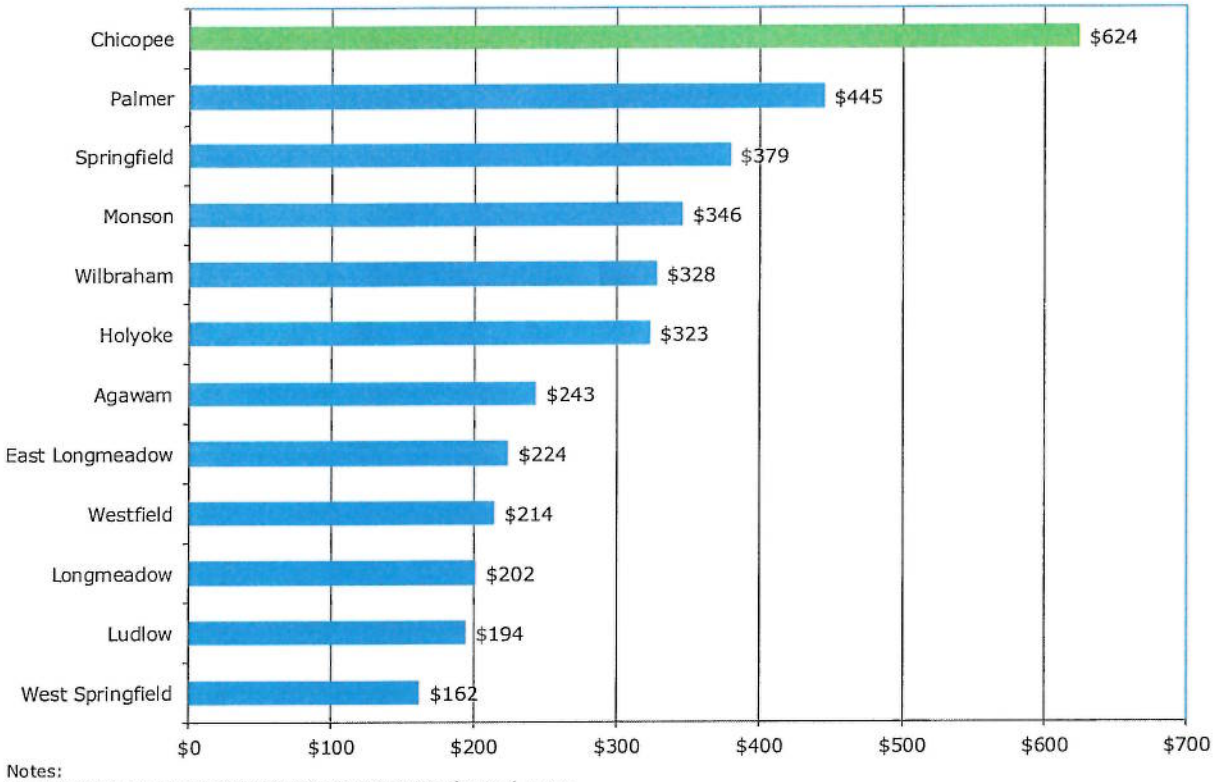
Integrated Management Plan

In 2014, the City embarked on an effort to develop an Integrated Management Plan (IMP) for the City's sewer, stormwater, flood control, and water infrastructure needs. Integrated planning represents a shift in capital planning at the municipal and regulatory levels. Capital and regulatory needs have typically been addressed individually at the regulatory level, which has had the unintended consequence of preventing the City from addressing capital needs in a cost effective way and with a holistic approach that addresses the most serious public health and water quality needs first. Integrated Planning is allowing the City to work with regulators to develop a comprehensive and adaptive capital plan to address the most serious needs first, while remaining in compliance with regulatory requirements.

At the time the FLTCP was developed, economic conditions and estimated construction costs indicated that the City would be able to eliminate its CSOs by the 2026 deadline without overburdening residential rate payers. The 2008 economic crisis, rising construction costs, and unanticipated construction challenges have resulted in a very different financial climate than originally anticipated. The City has spent more than anticipated, and the financial capability of the City's residents is lower than was projected during the development of the FLTCP. It is currently estimated that an additional $223 million is required to complete the remaining work of the FLTCP, and the City's sewer and stormwater fee is already the highest in the region (Figure 5).

The City is struggling to complete the FLTCP while capital needs that have been deferred over the past decade are becoming more urgent. Wastewater, stormwater, flood control,

and drinking water infrastructure are increasingly demanding more repairs and maintenance to continue to protect public health and the environment.



Notes:
Current costs are based on 2016 rates for 8,000 CF of annual usage
Chicopee sewer rate includes an annual $100 in stormwater fees. Westfield sewer rate includes $20 in stormwater fees.
These costs do not include future rate increases.

Figure 5. Average Annual Sewer/Stormwater Fee

Regulatory Compliance

The City has significantly reduced infiltration and inflow since 2006 and has met (above and beyond) the intent of the 314 CMR 12.00 amendment. Because of the City's extensive reduction in infiltration and inflow to-date, and the continued infiltration and inflow reduction anticipated as a result of future scheduled CSO abatement work, the City is complying with the regulatory requirements listed at the beginning of this letter, as described below:

1. **Final Long Term Control Plan** – Through the City's Final Long Term Control Plan, sources of inflow entering into the sewer system have been identified and the City is aggressively eliminating them through sewer separation. In addition, infiltration is being reduced through the construction of new PVC sanitary sewers and storm drains with tight joints.
2. **Sewer Television Inspections** – The City routinely completes CCTV inspections of its sewer and storm drain pipes to be replaced as part of the FLTCP. During design of each phase of the FLTCP, all pipe is CCTV inspected and evaluated for condition. Pipes with excessive infiltration are either replaced or lined. In addition, whenever City personnel CCTV inspect sewer and storm drain pipes as part of maintenance

activities, the City updates its inventory of CCTV inspection videos and condition information.

3. **Inflow Identification and Control Program** – As part of the FLTCP sewer separation work, the City identifies all storm drain connections to the sewer system located in the work limits and requires disconnection.

4. **Phased Evaluation of the Sewer System** – While the City has not completed a phased evaluation of the sewer system in accordance with MassDEP guidelines, the City has met and exceeded the intent of the phased evaluation, as described in the previous section, by aggressively identifying and removing infiltration and inflow.

As noted at the beginning of this letter, we request that MassDEP provide concurrence that the City's approach to complying with the I/I requirements described in 314 CMR 12.00 is acceptable. If you have any questions on the information provided in this letter, please contact Dave Partridge by telephone at (413) 572-3267 or by email at DJPartridge@TigheBond.com.

Very truly yours,

William J. Wood

William J. Wood
Chief Operator
City of Chicopee WPC/DPW

Enclosures
Copy: Jeffrey Neece, DPW Superintendent
Mike Williams, Assistant Chief Operator
Laurie Goff, Pretreatment Coordinator
Joshua Schimmel, Executive Director, Springfield Water and Sewer Commission

TOWN OF
East Longmeadow
MASSACHUSETTS 01028-2457

Board of Public Works
Daniel S. Burack, Chairman
Thomas G. Wilson, Jr
John F. Maybury

Superintendent of Public Works
Robert Peirent, P.E.
robert.peirent@eastlongmeadowma.gov
Telephone (413) 525-5400 ext 1200
Fax (413) 525-5413

February 2, 2017

Department of Environmental Protection
Western Regional Office
436 Dwight Street
Springfield, MA 01103

Attention: Paul Nietupski, Section Chief
Wastewater Management Program

RE: Wastewater Collection System Reporting

Dear Mr. Nietupski,

This letter responds to the requirements of 314 CMR 12.07 (6) for wastewater collection system operators to report annually on new sewer connections and infiltration and inflow (I&I) work conducted on their collection systems each year. This letter reports this information for calendar year 2016. This letter also serves as a response to a request by the Springfield Water and Sewer Commission for documentation of our I&I investigation and removal efforts during 2016 by letter to us dated January 18, 2017.

During 2016, there were twenty seven (27) new single family home sewer connections made to East Longmeadow's collection system. Using a value of 165 gallons per single family home, based on historical residential billing, we've estimated an annual sewer flow of 4,455 gallons per day from these new residential connections.

The Town continued to make progress on its Infiltration and Inflow (I/I) Removal program during 2016. We initiated a flow metering program in the spring of 2016 but discontinued this program when groundwater and rainfall conditions were not conducive to identifying segments of our collection system that exhibited excessive I&I. Due to ongoing drought conditions, we do not anticipate restarting flow metering activities until groundwater conditions return to normal. This will likely not occur in the spring of 2017.

I&I reduction work performed during 2016 included interior rehabilitation of 26 sewer manholes totaling of 256 vertical feet of rehabilitation. Work was performed by Green Mountain Pipeline Service of Royalston, Vermont.

If you have any questions or need any additional information, please feel free to contact me.

Very truly yours,

Robert Peirent, P.E.
Superintendent of Public Works

copy: Ryan Wingerter, Springfield Water and Sewer Commission – via email

S:\Sewer\MassDEP\2017\2017_02_2 DEP Sewer Collection System Reporting.doc

East Longmeadow
2016 - New Sewer Connections

Id No.	Date	Location	Type
2016-23990	1/20/2016	Street: 146 CANTERURY CIRCLE	Single Family Residence
2016-24018	1/28/2016	Street: 36 PONDVIEW DRIVE	Single Family Residence
2016-24195	3/9/2016	Street: 49 CAPRI DRIVE	Single Family Residence
2016-24196	3/9/2016	Street: 30 MILL ROAD	Single Family Residence
2016-24257	3/17/2016	Street: 526 PROSPECT STREET	Single Family Residence
2016-24376	4/8/2016	Street: 10 PEACHTREE ROAD	Single Family Residence
2016-24523	5/9/2016	Street: 90 PEMBROKE TERRACE	Single Family Residence
2016-24542	5/12/2016	Street: 152 GLYNN FARMS DR	Single Family Residence
2016-24623	5/31/2016	Street: 15 LOMBARD AVENUE	Single Family Residence
2016-24704	6/14/2016	Street: 13 PONDVIEW DRIVE	Single Family Residence
2016-24756	6/22/2016	Street: 107 PEMBROKE TERRACE	Single Family Residence
2016-24809	7/5/2016	Landmark: 13 SILVER FOX LANE	Single Family Residence
2016-24871	7/19/2016	Street: 39 PONDVIEW DRIVE	Single Family Residence
2016-24904	7/27/2016	Street: 140 CANTERURY CIRCLE	Single Family Residence
2016-24932	8/2/2016	Street: 45 STURBRIDGE LANE	Single Family Residence
2016-24948	8/5/2016	Street: 10 PATIENCE WAY	Single Family Residence
2016-25100	9/9/2016	Street: 346 KIBBE ROAD	Single Family Residence
2016-25118	9/14/2016	Street: 14 MAPLEHURST AV	Single Family Residence
2016-25130	9/16/2016	Street: 23 BLACK DOG LANE	Single Family Residence
2016-25289	10/20/2016	Street: 99 MAPLESHADE AVENUE	Single Family Residence
2016-25315	10/27/2016	Street: 340 PROSPECT STREET	Single Family Residence
2016-25339	11/2/2016	Street: 18 BROOK STREET	Single Family Residence
2016-25428	11/23/2016	Street: 132 PEMBROKE TERRACE	Single Family Residence
2016-25447	12/1/2016	Street: 57 CAPRI DRIVE	Single Family Residence
2016-25471	12/8/2016	Street: 30 ALLEN STREET	Single Family Residence
2016-25522	12/27/2016	Street: 10 WHITE AVENUE	Single Family Residence

Incorporated 1783

Town of
LONGMEADOW, MASSACHUSETTS

31 Pondside Road – 01106
TEL (413) 567-3400 ~ FAX (413) 567-9018
E-mail: publicworks@longmeadow.org

DEPARTMENT OF PUBLIC WORKS

January 31, 2017

Mr. Ryan C. Wingerter
Springfield Water & Sewer Commission
P.O. Box 995
Springfield, MA. 01101-0995

Dear Mr. Wingerter,

I am responding to your letter I received on January 18, 2017, concerning the new National Pollutant Discharge Elimination System Permit for the Springfield Regional Wastewater Treatment Facility. The following is a brief summary of the Town's efforts to reduce or eliminate excessive Infiltration/Inflow in 2016.

During 2016, the Town continued to perform sewer pipeline television inspections and manhole inspections. We completed 15.59 miles of sewer maintenance cleaning which consists of jetting sewer lines and removing any debris found. The inspections and cleaning are used to determine joint conditions, root intrusions, sources of infiltration and help locate any structural deficiencies in the system. The videos and log forms are looked at to determine where the problem areas are located so repairs and recommendations can be made for main replacements in the future.

The Towns FY16 capital infrastructure projects completed included replacement of 2,177 feet of sewer main and replacement of 12 manholes. FY17 projects will consist of installing a new 10" siphon on Elmwood Avenue. As part of DEP's Inspection Report, , Longmeadow will be required to submit an Infiltration/Inflow Analysis report by Dec 31,2017, in compliance with 314 CMR 12.04[c] 1. We have been working with our engineering consultant on this project so we can meet the December 2017 deadline.

The Town still continues its program of sewer line maintenance which is carried out on a daily basis throughout the year. During this effort, attention is given to the condition of the manholes, excessive flows

and any other abnormalities in the manholes. If excessive flows are found, crews are dispatched to find and correct the problems. The Town of Longmeadow will continue to upgrade and improve its sewer collection system, pumping stations and maintenance operating procedures every year to help reduce I/I by continuing our efforts to locate deficiencies and correcting them with our capital projects.

If further information is required, please feel free to contact me.

Sincerely,

Peter W. Thurber

Assistant DPW Director

Water and Wastewater

Operations

Department of Public Works
The Town of Ludlow, Massachusetts

February 15, 2017

Mr. Ryan C. Wingerter
Deputy Director of Wastewater Operations
Springfield Water and Sewer Commission
P.O. Box 995
Springfield, MA. 01101-0995

Re: National Pollutant Discharge Elimination System
2016 Permit Information

Dear Mr. Wingerter:

We are responding to Springfield Water and Sewer Commission's annual request for information to support the Springfield Regional Wastewater Treatment Facility permit reporting requirements for the National Pollutant Discharge Elimination System Permit. It is our understanding the NPDES permit requires information from the Town of Ludlow identifying efforts conducted by the department to reduce infiltration and inflows to the regional sanitary sewer collection system during the 2016 calendar year. The Town of Ludlow has been and will continue to be proactive in our efforts to reduce and or eliminate excessive storm waters from entering the wastewater collection system. The town has a contract with Mott MacDonald to perform and Inflow and Infiltration Study on the Town's sewer system that is currently underway. The report should be completed by the end of 2017.

The DPW infrastructure maintenance program routinely replaces catch basin frames, grates, and sewer manhole covers throughout the system to reduce inflow to the collection system. Also, the DPW routinely maintains the system by flushing and cleaning the sewer and storm drainage systems with our Camel vacuum equipped vehicle. The sewer system problem areas are monitored and television video data is recorded to evaluate line conditions. In addition, maintenance has included regularly scheduled root removal treatment in known problem areas. Several sewer lateral repairs were conducted on West Ave, Loopley Street, East Street, and Lockland Avenue that helped eliminate infiltration into the system.

Please do not hesitate to call if you require any additional information regarding our efforts to reduce infiltration and inflow to the collection system.

Sincerely,

Jim Goodreau
Assistant Town Engineer

198 Sportsmen's Road, Ludlow, Massachusetts 01056 Tel. (413) 583-5625, Fax (413) 589-1488

TOWN OF WEST SPRINGFIELD

DEPARTMENT OF PUBLIC WORKS

26 CENTRAL STREET

SUITE 17

WEST SPRINGFIELD, MA 01089-2763

Monday - Friday
8:00 AM - 4:30 PM

Tel: (413) 263-3030
Fax: (413) 734-9745

Robert J. Colson
Director

James J. Czach, P.E.
Town Engineer

William R. Guevremont III
Deputy Director of Operations

Jeffrey R. Auer
Deputy Director of Water

Cynthia Zarichak
Office Manager

Date: March 1, 2017

Via e-mail
To: Ryan C. Wingerter
Deputy Director of Wastewater Operations
Springfield Water and Sewer Commission

Re: West Springfield calendar year 2016 Inflow and Infiltration reduction

Dear Mr. Wingerter,

Please find this letter in response to your letter dated January 18, 2017 requesting information on our efforts to reduce I/I to the West Springfield collection system that is served by the SRWTF during 2016

On 8/12/16 Tighe & Bond submitted Clean Water Construction and Drinking Water Construction PEF's to the SRF program on the Town's behalf.

Both PEF's scored well enough to make it onto the DEP's Draft 2017 Intended Use Plan. The Town of West Springfield's Town Council and Mayor have approved funding of the design / bid documents for both projects, with the intention of having shovel ready documents by the October 15, 2017 SRF program deadline.

The CWSRF total project value with technical services is $8,296,500.00. The CWSRF projects are focused to improve pump stations and to make $1,896,864.00 worth of repairs to our previously identified / worst areas of Inflow and Infiltration to the sanitary sewer system. This is the great step that we have taken in year 2016 to reduce I/I to the system.

Please find attached the CWSRF online submission for your reference.

Please let me know if you have any questions.

Sincerely,

Robert J. Colson

Robert J. Colson
Director

CC: James J. Czach, P.E., William R. Guevremont III

Town of Wilbraham
DEPARTMENT OF PUBLIC WORKS
240 Springfield Street
Wilbraham, Massachusetts 01095
(413) 596-2800 ext. 208

Edmond W. Miga, Jr., P.E.
Director of Public Works

January 28, 2017

Ryan C. Wingerter, Collection System Superintendent
Springfield Water and Sewer Commission
P. O. Box 995
Springfield, MA 01101-0995

Dear Mr. Wingerter:

The Wilbraham DPW has received your letter dated January 18, 2017 requesting documentation of efforts taken by each of the collection systems served by the Springfield Regional Wastewater Treatment Facility to reduce infiltration/inflow during the previous calendar year.

Our efforts continue to include:

- Daily monitoring of flows now in seven (7) key locations in Town.
- Use of Mission communications to track pump run times vs. rain events. (see examples)
- Inspection of Manholes on Main Street from Springfield St to HS.
- Water/sewer bill notice. See enclosed.
- Periodically camera lines that are suspect of I & I with Town owned equipment.
- Emphasized the issue in the Town Report (see enclosed).
- Verbal communication with Plumbing Inspector to be aware and report and enforce connections he may find.
- Used Jetvac truck to assist in cleaning and to camera line for condition.

As you know, keeping our flows down has a financial incentive to reducing our bill. Hope that this documentation meets your requirements.

Sincerely,

Edmond W. Miga, Jr., P.E.
Director of Public Works

EWM/dd

Town Report

Wastewater Division:

This Enterprise Division has two (2) full-time employees and shares another employee half the time with the Highway Department. They are responsible for maintaining 36 miles of sewer mains, along with ten (10) pump stations. Sewage is pumped to the City of Springfield's regional plant for treatment.

A failure of an air release valve on the Main Street sewer line from the high school pump station required continual maintenance while a solution to repair was investigated and work completed. Additionally, work was completed at the other pump stations as part of our rehabilitation project.

We continue to ask residents to be aware that it is illegal to hook a sump pump into the sewer system. Flow from sump pumps increases our flow and the bill from the City of Springfield, costing us all unnecessary money. Make sure your sump pump is not connected to sewer. Secondly, do not dump grease or oil down your drain. Grease and oil will solidify in your own plumbing and sewer lateral, as well as the Town's sewer lines. Expensive blockages can be avoided by simple practice of putting grease in the trash and not down the drain.

Wastewater rates have remained unchanged since 2008. They are as follows:

Residential rate	$4.10 per 100 c.f.
Commercial rate	$5.00 per 100c.f.
Minimum charge	$52.50
Maximum charge	$492.00
Flat rate	$270.60

Waste Water Employees:
Daniel Gore, Foreman
Gary Butler, Technician

Ed Jenkins (1/2 time Highway – 1/2/ time Waste Water)

Water Division:

All bills due the Town of Wilbraham for Water and Sewer use are payable to the Town Collector within 30 days. All abatement/hardship requests must be submitted in writing within 30 days. Each sewer bill and water bill unpaid after 30 days will be assessed a separate penalty of $25.00 each and an interest of 14 percent per annum computed from the date the bill was mailed. Unpaid water bills after 30 days will also be subject to water shut off.

Unpaid bills, including late payment penalties in the previous calendar year, may be added to the real estate property tax in the form of a lien for the current year as provided for in Mass. General Laws, Chapter 40, Section 42A through 42F, inclusive.

If the title of the property changes, the name and address of the new owner should be given to the Public Works office in order that bills may be properly rendered. Bills are sent twice a year, once in November and once in May. If you have any questions or do not receive your Water or Sewer bill, contact the Public Works office at 596-2800 ext. 208.

FREQUENTLY ASKED QUESTIONS:

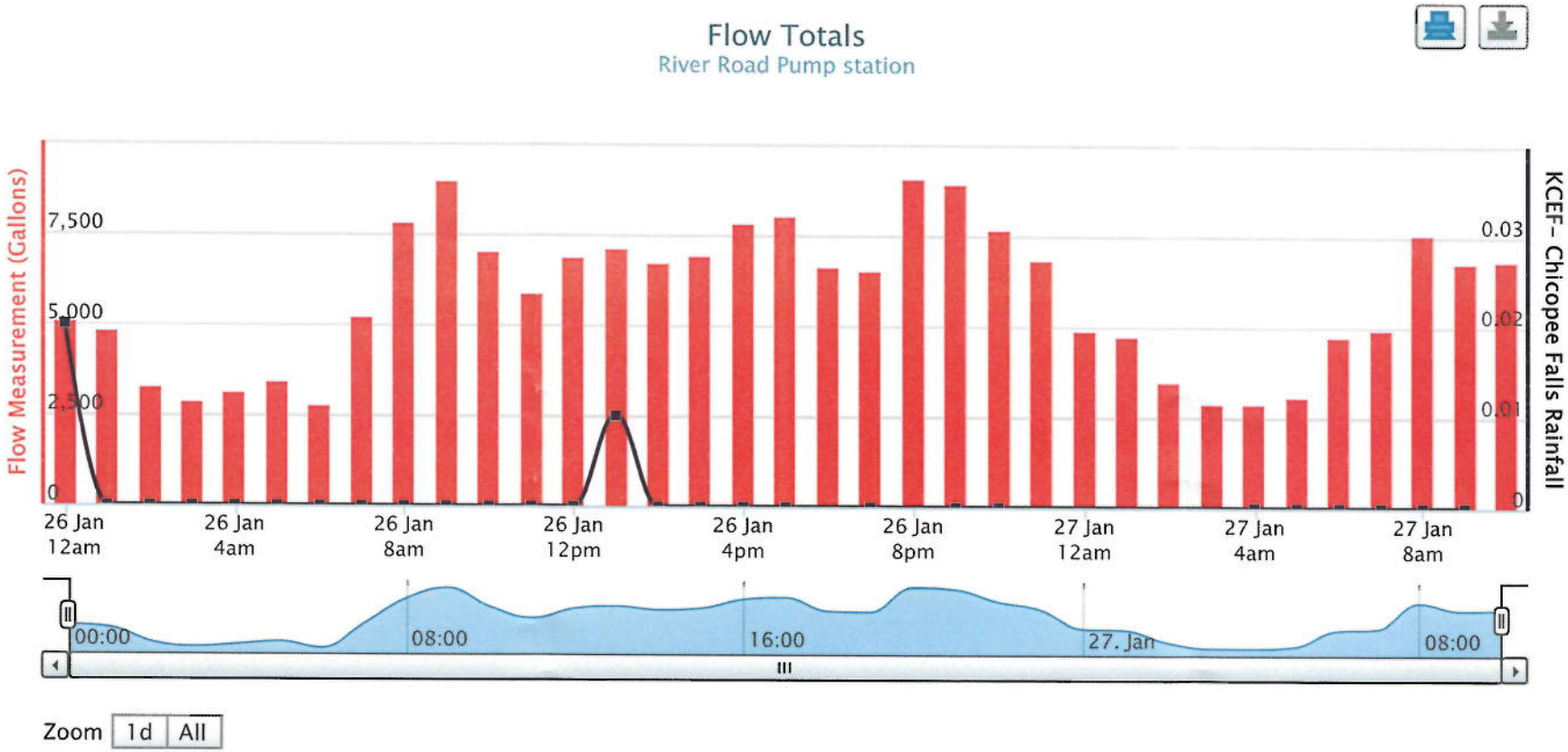
How much does a typical residential customer pay for one gallon of water?
Divide residential rate by 748 gallons.

How do I calculate my water bill:
Multiply usage (cubic feet) by rate and divide by 100 = $$

How do I calculate my sewer bill:
Multiply water usage by rate and divide by 100 = $$

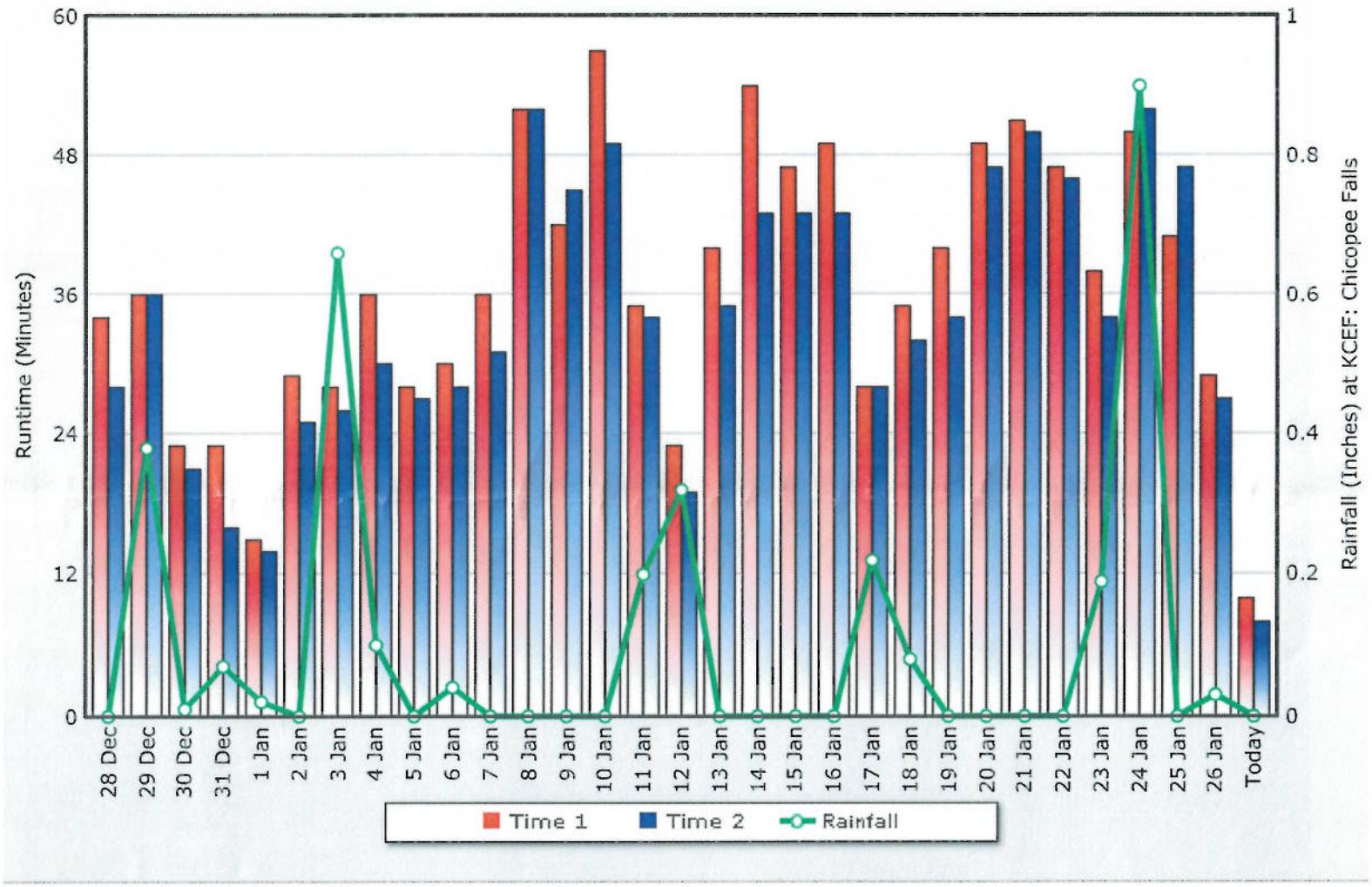
How many gallons are in one hundred cubic feet of water?
There are 748 gallons in one hundred cubic feet of water.

A reminder to all residents that sump pumps connected to the sanitary sewer system are illegal. The additional flows increase our costs to Springfield, which is passed on to all residents connected to the sewer system.


Flow Totals
River Road Pump station
Flow Measurement (Gallons)
7,500
5,000
2,500
0
0.03
0.02
0.01
0
KCEF- Chicopee Falls Rainfall
26 Jan 12am
26 Jan 4am
26 Jan 8am
26 Jan 12pm
26 Jan 4pm
26 Jan 8pm
27 Jan 12am
27 Jan 4am
27 Jan 8am
00:00
08:00
16:00
27. Jan
08:00
Zoom
1d
All

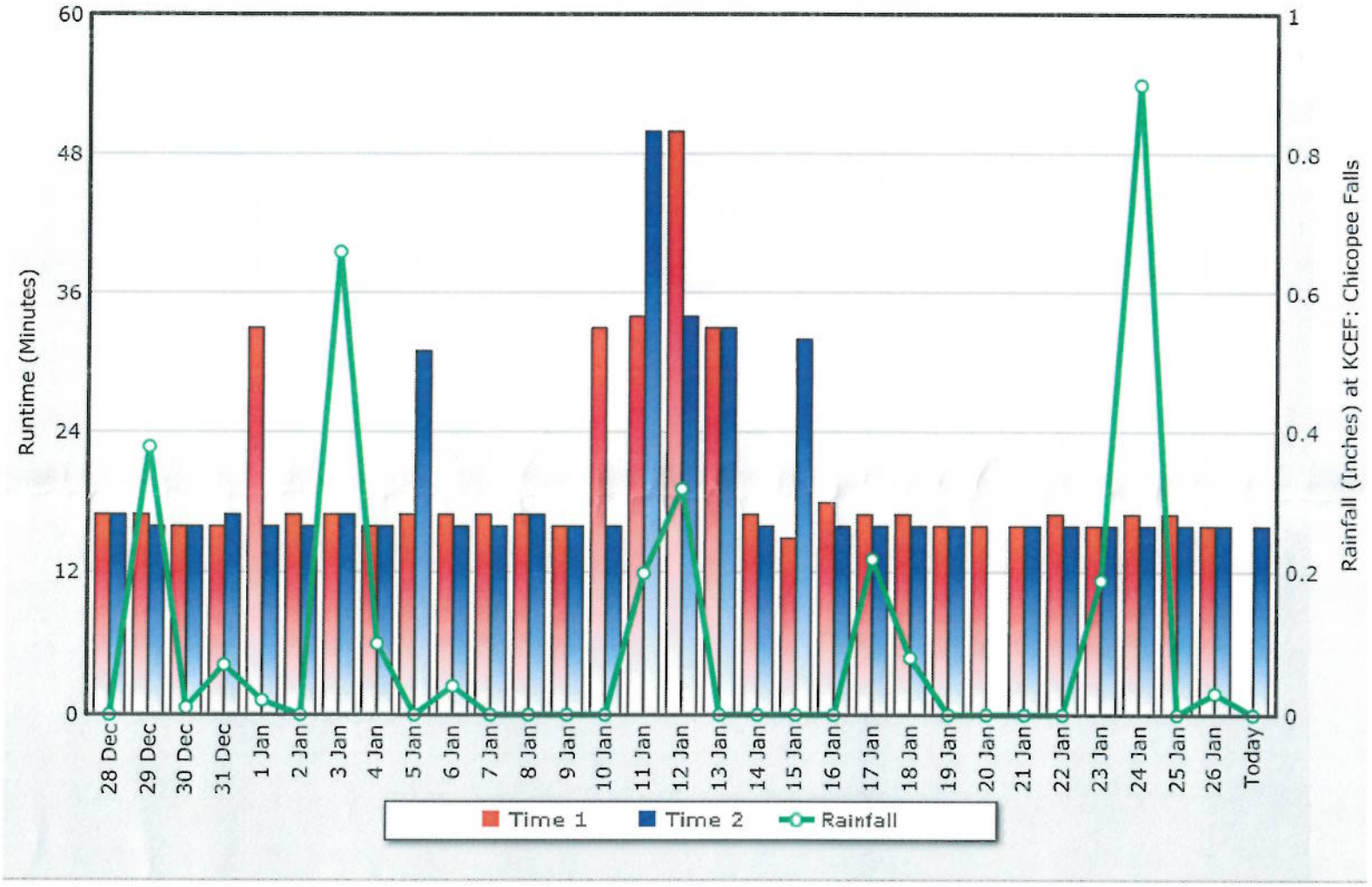
Runtime vs. Rainfall Graph

Linwood Drive PS



Runtime vs. Rainfall Graph

Fernwood



Appendix G – CY 2016 MADEP SSO Notification Forms

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Watershed Permitting Program

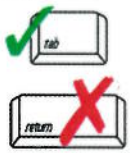
Sanitary Sewer Overflow (SSO)/Bypass Notification Form

FOR DEP USE ONLY

Tax Identification Number

A. General Information

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



1. Facility Information

NPDES Permit No. 0101613 & 0103331
a. Reporting Facility Permit Number

Springfield Water and Sewer Commission
b. Name of Collection System/Treatment Works

2. Authorized Representative filing this notification form:

Ryan	Wingerter	413-787-6256
a. First Name	b. Last Name	c. Telephone (10)

Collection System Superintendent	ryan.wingerter@waterandsewer.org
d. Title of Authorized Representative	e. E-mail Address of Authorized Representative

3. Event Report Information

a. Are you reporting: ☒ 1. Unanticipated SSO or Bypass ☐ 2. Anticipated SSO or Bypass

See DEP Regional Office telephone and fax numbers at the end of this form.

B. Phone Notifications Made, if any:

1. **MassDEP person** contacted: _____ a. first name _____ b. last name

Date/Time MassDEP contacted by phone: _____ c. Date (mm/dd/yyyy) Time: _____ d. hh:mm ☐ e. am ☒ f. pm

2. **EPA person** contacted: _____ a. first name _____ b. last name

Date/Time EPA contacted by phone: _____ c. Date (mm/dd/yyyy) Time: _____ d. hh:mm ☐ e. am ☐ f. pm

3. Others notified (select all that apply): ☐ a. Conservation Commission ☐ b. Board of Health ☐ c. Harbormaster ☐ d. Downstream WS ☐ e. Watershed Association ☐ f. Shellfish Warden ☐ g. Other: _____ h. Specify

C. General Information About SSO/Unanticipated Bypass

1. When did the event occur? 2-26-16 a. Date (mm/dd/yyyy) Time: 2:15 b. hh:mm ☐ c. am ☒ d. pm

2. Location of event: St. Michael's Cemetary a. Number and Street (or closest address) _____ b. latitude _____ c. longitude

3. Estimated volume of overflow discharge at the time of this report (select one):

☐ a. > 1 million gallons (MG)
☐ b. > 100,000 gal. and < 1 MG
☐ c. > 10,000 gal. and < 100,000 gal.
☒ d. < 10,000 gal.

e. Method of estimating volume: Visual

4. Where did the overflow discharge to? (e.g., surface water, ground) Watershops Pond

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notification Form

FOR DEP USE ONLY

Tax Identification Number

C. General Information About SSO/Unanticipated Bypass (cont.)

5. Identify causes of/reasons for the event: (select all that apply)

☐ a. rain ☐ b. snowmelt ☐ c. high groundwater

☐ d. insufficient capacity ☒ e. sewer system blockage or collapse

☐ f. pump/lift station failure ☐ g. treatment facility equipment failure

☒ h. Other: _____ i. Specify

6. Have corrective actions been completed? ☒ a. Yes ☐ b. No ☐ c. No Action Required

7. Corrective measures taken (select all that apply, or use Section E to attach additional comments):

☒ a. repaired sewer/cleared blockage ☐ b. repaired pump/lift station ☐ c. repaired service connection

☐ d. drained or pumped sewage out of building ☐ e. disinfection treatment ☐ f. backflow prevention device installed

☐ g. Other: _____ h. Specify

D. General Information About Anticipated Bypass

1. When will the bypass occur? _____ a. Date (mm/dd/yyyy) Time: _____ b. hh:mm ☐ c. am ☐ d. pm

2. Where will the bypass occur? _____ a. Number and Street (or closest address) _____ b. latitude _____ c. longitude

3. Estimated volume of overflow discharge at the time of this report (select one):

☐ a. < 100,000 gallons (MG) ☐ b. > 100,000 gal. and < 1 MG ☐ c. > 1 million gallons (MG)

d. Method of estimating volume: _____

4. Identify causes of/reasons for the event: (select all that apply)

☐ a. rain ☐ b. snowmelt ☐ c. high groundwater

☐ d. insufficient capacity ☐ e. sewer system blockage or collapse

☐ f. pump/lift station failure ☐ g. treatment facility equipment failure

☐ g. Other: _____ i. Specify

5. Will an SSO occur during the bypass? ☐ a. Yes

a.1. Where will SSO discharge to? _____

A 5-day follow-up report is required for the SSO.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notification Form

FOR DEP USE ONLY

Tax Identification Number

D. General Information About Anticipated Bypass (cont.)

5. ☐ b. No

Please be advised that if the anticipated bypass detailed above results in an unanticipated bypass/SSO, MassDEP must be notified within 24 hours and a new form completed.

Please provide comments in Section E detailing the preventive measures to be taken during the event.

E. Comments/Attachments/Follow-up

I wish to provide (select all that apply):

☐ 1. Attachment ☐ 2. Additional comments below: ☐ 3. No additional comments or attachments

2a. Additional comments and planned actions:

F. Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

1. Signature of Authorized Representative

2-26-16
2. Date Signed

Please keep a copy of this report for your records. When submitting additional information, include the MassDEP Incident Number from this report.

MassDEP Regional Office and EPA Telephone and Fax Numbers:

Northeast Region	Phone: 978-694-3215	Fax: 978-694-3499
Southeast Region	Phone: 508-946-2750	Fax: 508-947-6557
Central Region	Phone: 508-792-7650	Fax: 508-792-7621
Western Region	Phone: 413-784-1100	Fax: 413-784-1149
EPA Contact	Phone: 617-918-1766	
DEP 24-hour emergency	Phone: 888-304-1133	

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notification Form

FOR DEP USE ONLY

Tax Identification Number

A. General Information

1. Facility Information

NPDES Permit No. 0101613 & 0103331
a. Reporting Facility Permit Number

Springfield Water and Sewer Commission
b. Name of Collection System/Treatment Works

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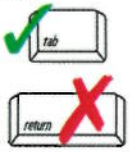

2. Authorized Representative filing this notification form:

Ryan	Wingerter	413-787-6256
a. First Name	b. Last Name	c. Telephone (10)

Collection System Superintendent	ryan.wingerter@waterandsewer.org
d. Title of Authorized Representative	e. E-mail Address of Authorized Representative

3. Event Report Information

a. Are you reporting: ☒ 1. Unanticipated SSO or Bypass ☐ 2. Anticipated SSO or Bypass

See DEP Regional Office telephone and fax numbers at the end of this form.

B. Phone Notifications Made, if any:

1. **MassDEP person** contacted: _____ a. first name _____ b. last name

Date/Time MassDEP contacted by phone: _____ c. Date (mm/dd/yyyy) Time: _____ d. hh:mm ☐ e. am ☒ f. pm

2. **EPA person** contacted: _____ a. first name _____ b. last name

Date/Time EPA contacted by phone: _____ c. Date (mm/dd/yyyy) Time: _____ d. hh:mm ☐ e. am ☐ f. pm

3. Others notified (select all that apply): ☐ a. Conservation Commission ☐ b. Board of Health ☐ c. Harbormaster ☐ d. Downstream WS ☐ e. Watershed Association ☐ f. Shellfish Warden ☐ g. Other: _____ h. Specify

C. General Information About SSO/Unanticipated Bypass

1. When did the event occur? 3-28-16 a. Date (mm/dd/yyyy) Time: 4:15 b. hh:mm ☐ c. am ☒ d. pm

2. Location of event: 274 Newhouse St a. Number and Street (or closest address) _____ b. latitude _____ c. longitude

3. Estimated volume of overflow discharge at the time of this report (select one):

☐ a. > 1 million gallons (MG)
☐ b. > 100,000 gal. and < 1 MG
☐ c. > 10,000 gal. and < 100,000 gal.
☒ d. < 10,000 gal.

e. Method of estimating volume: Visual

4. Where did the overflow discharge to? (e.g., surface water, ground) Basement

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notification Form

FOR DEP USE ONLY

Tax Identification Number

C. General Information About SSO/Unanticipated Bypass (cont.)

5. Identify causes of/reasons for the event: (select all that apply)

☐ a. rain ☐ b. snowmelt ☒ c. high groundwater

☐ d. insufficient capacity ☒ e. sewer system blockage or collapse

☐ f. pump/lift station failure ☐ g. treatment facility equipment failure

☒ h. Other: _____ i. Specify

6. Have corrective actions been completed? ☒ a. Yes ☐ b. No ☐ c. No Action Required

7. Corrective measures taken (select all that apply, or use Section E to attach additional comments):

☒ a. repaired sewer/cleared blockage ☐ b. repaired pump/lift station ☐ c. repaired service connection

☐ d. drained or pumped sewage out of building ☐ e. disinfection treatment ☐ f. backflow prevention device installed

☐ g. Other: _____ h. Specify

D. General Information About Anticipated Bypass

1. When will the bypass occur? _____ a. Date (mm/dd/yyyy) Time: _____ b. hh:mm ☐ c. am ☐ d. pm

2. Where will the bypass occur? _____ a. Number and Street (or closest address) _____ b. latitude _____ c. longitude

3. Estimated volume of overflow discharge at the time of this report (select one):

☐ a. < 100,000 gallons (MG) ☐ b. > 100,000 gal. and < 1 MG ☐ c. > 1 million gallons (MG)

d. Method of estimating volume: _____

4. Identify causes of/reasons for the event: (select all that apply)

☐ a. rain ☐ b. snowmelt ☐ c. high groundwater

☐ d. insufficient capacity ☐ e. sewer system blockage or collapse

☐ f. pump/lift station failure ☐ g. treatment facility equipment failure

☐ g. Other: _____ i. Specify

5. Will an SSO occur during the bypass? ☐ a. Yes

a.1. Where will SSO discharge to? _____

A 5-day follow-up report is required for the SSO.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notification Form

FOR DEP USE ONLY

Tax Identification Number

D. General Information About Anticipated Bypass (cont.)

5. ☐ b. No

Please be advised that if the anticipated bypass detailed above results in an unanticipated bypass/SSO, MassDEP must be notified within 24 hours and a new form completed.

Please provide comments in Section E detailing the preventive measures to be taken during the event.

E. Comments/Attachments/Follow-up

I wish to provide (select all that apply):

☐ 1. Attachment ☐ 2. Additional comments below: ☐ 3. No additional comments or attachments

2a. Additional comments and planned actions:

F. Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

1. Signature of Authorized Representative

3-23-16
2. Date Signed

Please keep a copy of this report for your records. When submitting additional information, include the MassDEP Incident Number from this report.

MassDEP Regional Office and EPA Telephone and Fax Numbers:

Northeast Region	Phone: 978-694-3215	Fax: 978-694-3499
Southeast Region	Phone: 508-946-2750	Fax: 508-947-6557
Central Region	Phone: 508-792-7650	Fax: 508-792-7621
Western Region	Phone: 413-784-1100	Fax: 413-784-1149
EPA Contact	Phone: 617-918-1766	
DEP 24-hour emergency	Phone: 888-304-1133	

190 M Street Extension
Agawam, MA 01001
Tel 413-732-6501
Fax 413-732-7071
www.suez-na.com

May 26, 2016

US Environmental Protection Agency
Water Enforcement, OES4-SMR
5 Post Office Square, Suite 100
Boston, MA 02109-3912

RE: Report of Sanitary Sewer Overflow (SSO) on May 25, 2016

Suez Water Environmental Services Inc., on behalf of the Springfield Water and Sewer Commission is hereby notifying your agency of a Sanitary Sewer Overflow at the Tiffany Street Pump Station, Springfield MA. This information was previously reported to both your office and the MA DEP by telephone on May 25, 2015 at approximately 10:30 am.

On May 25, 2016, at 7:07 am, the Collections System Supervisor at the Springfield Regional Wastewater Treatment Facility received a "Power Fail" alarm via the facilities SCADA system from the Tiffany Street, Dickenson St and Barney Lane Pump Stations. Shortly after the loss of power alarm, a Tiffany St a "Pump Failed To Start Alarm" was received. At the Dickenson St Pump Station the generator started and powered the station pumps. Barney Lane Pump Station is a small, low flow station with hours of storage capacity. The Collections System Supervisor and two mechanics were deployed to the Tiffany St Pump Station with the mechanics reaching the station by 7:30 am. Upon arrival, they found the generator running in the "cool down" mode, utility power restored, but the station pumps not running. Following his evaluation of the station status, the Collections Supervisor was unable to determine the cause of the sewage pumps not running. At 7:40 am the Collections Supervisor called for a second set of mechanics to deploy a mobile pump to the station and had it in use by 8:40 am. The SSO stopped shortly after the portable pump was started. The discharge lasted from approximately 8:29 am to 8:41 am releasing approximately 1000 gallons. The Collections Supervisor also called an electrical contractor, Amp Electric, to trouble shoot the electrical issue. The contractor determined that 4 of the 6 fuses were blown for the 2 pumps. The blown fuses were replaced and both pumps were put back in service by 8:54 am. The electrical contractor reported that the blown pump fuses resulted from a phase imbalance of utility power to the station prior to the outage.

The loss of utility power and the blown fuses resulted in the SSO. Immediate identification and response minimized the release to approximately 12 minutes with an estimated overflow volume of 1000 gallons that discharged into the nearby Pecousic Brook. From the start of the release, correction and clean up were completed in less than 30 minutes. Suez Water Environmental Services intends to investigate the replacement of fuses with intrinsically safe, phase sensitive, overload relays.

190 M Street Extension
Agawam, MA 01001
Tel 413-732-6501
Fax 413-732-7071
www.suez-na.com

Sincerely,

Mickey J Nowak

Mickey Nowak, Project Manager,
Suez Water Environmental Services Inc.

Cc: Josh Schimmel, Executive Director SWSC
Paul Nietupski, MA DEP
Kathleen Keohane MA DEP

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notification Form

FOR DEP USE ONLY

Tax Identification Number

A. Reporting Facility

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.

1. Facility Information

Springfield Regional Wastewater Facility — Reporting Sewer Authority

MA 0103331 — Permit #

2. Authorized Representative Transmitting Form:

Kevin — First Name

Carney — Last Name

(413) 732-6501 — Telephone No.

Asst. Project Manager — Title

Kevin.carney@suez-na.com — E-mail Address

B. Phone Notifications:

See DEP Regional Office telephone and fax numbers at the end of this form.

1. **MassDEP staff** contacted: Paul (first name) Nietupski (last name)

Date/Time contacted: 5-25-2016 (Date) 10:25 AM (Time) ☒ am ☐ pm

2. **EPA staff** contacted: George (first name) Harding (last name)

Date/Time EPA contacted: 5-25-2016 (Date) 10:20 am (Time) ☒ am ☐ pm

3. Board of Health contacted: (First Name) (Last Name)

Date/Time contacted: (Date) (Time) ☐ am ☐ pm

4. Others notified (select all that apply); ☐ Conservation Commission

☐ Harbormaster ☐ Shellfish Warden ☐ Division of Marine Fisheries

☐ Downstream Drinking Water Supplier ☐ Watershed Association

☐ Beach Resource Manager ☐ Other: (specify)

C. SSO Information

1. SSO Discovered: 5-25-2016 (Date) 8:29 AM (Time) ☒ am ☐ pm

By: John Gladkowski

2. SSO Stopped: 5-25-2016 (Date) 8:41 am (Time) ☒ am ☐ pm

3. SSO Discharge from: ☐ Sanitary Sewer Manhole ☐ Pump Station

☐ Backup into Property ☒ Other: overflow pipe (specify)

4. SSO Discharge to: ☐ Ground Surface (no release to surface water)

☒ Direct to Receiving Water: Pecousic Brook (surface water)

☐ Catch basin to Receiving Water (surface water)

☐ Backup into Property Basement

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notification Form

FOR DEP USE ONLY

Tax Identification Number

C. SSO Information (cont.)

Location: Tiffany Street Pump Station
(Description of discharge site or closest address)

5. Estimated SSO Volume at time of this Report: 1000 gal.

   Method of Estimating Volume: Visual observation

6. Cause of SSO Event:

   ☐ Rain Event ☒ Pump Station Failure ☐ Insufficient Capacity in System

   ☐ Treatment Unit failure

   ☐ Sewer System Blockage: ☐ Pipe Collapse ☐ Root Intrusion ☐ Grease Blockage

   ☒ Other: loss of utility power, phase imbalance, blown fuses
   (Specify)

7. Corrective Actions Taken:

   Replaced 4 fuses

   Impact Area cleaned and/or disinfected: ☐ Yes ☐ No

   N/A

   Corrective Actions Completed: ☑ Yes ☐ No

   Replaced 4 of 6 fuses for sewage pumps 1+2

D. Comments/Attachments/Follow-up

I wish to provide (select all that apply):

☐ Attachment ☐ Additional comments below: ☒ No additional comments or attachments

Additional comments and planned actions:

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notification Form

FOR DEP USE ONLY

Tax Identification Number

E. Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Mickey J Fawcett — Signature of Authorized Representative

5-26-16 — Date Signed

Please keep a copy of this report for your records. When submitting additional information, include the MassDEP Incident Number from this report.

MassDEP Regional Office and EPA Telephone and Fax Numbers:

Northeast Region	Phone: 978-694-3215	Fax: 978-694-3499
Southeast Region	Phone: 508-946-2750	Fax: 508-947-6557
Central Region	Phone: 508-792-7650	Fax: 508-792-7621
Western Region	Phone: 413-784-1100	Fax: 413-784-1149
EPA Contact	Phone: 617-918-1870	Fax: 617-918-0870
DEP 24-hour emergency	Phone: 888-304-1133	

Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Watershed Permitting Program

FOR DEP USE ONLY

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

Tax Identification Number

A. Reporting Facility

1. Facility Information

Springfield Water and Sewer Commision	0101613 & 0103331
Reporting Sewer Authority	Permit #

2. Autorized Representative Transmitting Form:

Ryan Wingerter	413-787-6256 x128
Name	Telephone #
Deputy Director of Wastewater Operations	ryan.wingerter@waterandsewer.org
Title	Email Address

B. Phone Notifications

MassDEP Staff Contacted: _____ _____

Date/Time Contacted: _____ _____

EPA Staff Contacted: _____ _____

Date/Time Contacted: _____ _____

Board of Health Contacted: _____ _____

Date/Time Contacted: _____ _____

Others Notified:

☐ Harbormaster ☐ Shellfish Warden ☐ Conservation Commision ☐ Division of Marine Fisheries

☐ Downstream Drinking Water Supply ☐ Watershed Association ☐ Beach Resource Manager

☐ Other: _____

C. SSO Information

1. SSO Discovered By: CUSTOMER

Date/Time Discovered: 9/19/2016 8:00 AM

2. SSO Date/Time Stopped: 9/19/2016 9:00 AM

3. SSO Discharge From: ☐ Sanitary Sewer Manhole ☐ Pump Station ☒ Backup Into Property

☐ Other: _____

4. SSO Discharge To: ☐ Ground Surface (no release to surface water)

☐ Direct to Receiving Water _____ (surface water)

☐ Catch Basin to Receiving Water _____ (surface water)

☒ Backup into Property Basement

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

FOR DEP USE ONLY

Tax Identification Number

C. SSO Information (cont.)

Location: 8 Fort St.
(description of discharge site or closest address)

5. Estimated SSO Volume at Time of This Report: < 10,000 gal

Method of Estimating Volume: Visual inspection of basement after back-up

6.Cause of SSO Event

[X] Rain Event [ ] Pump Station Failure [ ] Insufficient Capacity in System [ ] Treatment Unit Failure

[ ] Sewer System Blockage [ ] Pipe Collapse [ ] Root Intrusion [ ] Grease Blockage

[ ] Other:

7. Corrective Actions Taken

Crews assessed the situation and determined the backup was caused by the rain event. Combined sewer wet weather capacity related issues that result in SSOs are tracked, trended, and regularly prioritized in an asset management system and addressed through the annual capital planning program.

Impact Area Cleaned and/or Disinfected: [ ] Yes [X] No

Corrective Actions Completed: [X] Yes [ ] No

D. Comments/Attachments/Follow-up

I wish to provide (select all that apply):

[ ] Attachment [ ] Additional Comments Below [ ] No Additional Comments or Attachments

Additional Comments and Planned Actions:

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

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Tax Identification Number

E. Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative

12-8-16
Date Signed

Please keep a copy of this report for your records. When submitting additional information, include the MassDEP Incident Number from this report.

MassDEP Regional Office and EPA Telephone and Fax Numbers:

Northeast Region	Phone: 978-694-3215	Fax: 978-694-3499
Southeast Region	Phone: 508-946-2750	Fax: 508-947-6557
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Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notification Form

FOR DEP USE ONLY

Tax Identification Number

A. General Information

1. Facility Information

NPDES Permit No. 0101613 & 0103331
a. Reporting Facility Permit Number

Springfield Water and Sewer Commission
b. Name of Collection System/Treatment Works

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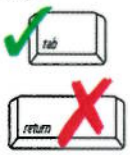


2. Authorized Representative filing this notification form:

Ryan	Wingerter	413-787-6256
a. First Name	b. Last Name	c. Telephone (10)

Collection System Superintendent	ryan.wingerter@waterandsewer.org
d. Title of Authorized Representative	e. E-mail Address of Authorized Representative

3. Event Report Information

a. Are you reporting: ☒ 1. Unanticipated SSO or Bypass ☐ 2. Anticipated SSO or Bypass

See DEP Regional Office telephone and fax numbers at the end of this form.

B. Phone Notifications Made, if any:

1. **MassDEP person** contacted: _____ a. first name _____ b. last name

Date/Time MassDEP contacted by phone: _____ c. Date (mm/dd/yyyy) Time: _____ d. hh:mm ☐ e. am ☒ f. pm

2. **EPA person** contacted: _____ a. first name _____ b. last name

Date/Time EPA contacted by phone: _____ c. Date (mm/dd/yyyy) Time: _____ d. hh:mm ☐ e. am ☐ f. pm

3. Others notified (select all that apply): ☐ a. Conservation Commission ☐ b. Board of Health ☐ c. Harbormaster ☐ d. Downstream WS ☐ e. Watershed Association ☐ f. Shellfish Warden ☐ g. Other: _____ h. Specify

C. General Information About SSO/Unanticipated Bypass

1. When did the event occur? 4-17-16 a. Date (mm/dd/yyyy) Time: 1:45 b. hh:mm ☐ c. am ☒ d. pm

2. Location of event: 11 & 20 Laurence St a. Number and Street (or closest address) _____ b. latitude _____ c. longitude

3. Estimated volume of overflow discharge at the time of this report (select one):

☐ a. > 1 million gallons (MG)
☐ b. > 100,000 gal. and < 1 MG
☐ c. > 10,000 gal. and < 100,000 gal.
☒ d. < 10,000 gal.

e. Method of estimating volume: Visual

4. Where did the overflow discharge to? (e.g., surface water, ground) Basement

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notification Form

FOR DEP USE ONLY

Tax Identification Number

C. General Information About SSO/Unanticipated Bypass (cont.)

5. Identify causes of/reasons for the event: (select all that apply)

☐ a. rain ☐ b. snowmelt ☐ c. high groundwater

☐ d. insufficient capacity ☒ e. sewer system blockage or collapse

☐ f. pump/lift station failure ☐ g. treatment facility equipment failure

☐ h. Other: i. Specify

6. Have corrective actions been completed? ☒ a. Yes ☐ b. No ☐ c. No Action Required

7. Corrective measures taken (select all that apply, or use Section E to attach additional comments):

☒ a. repaired sewer/cleared blockage ☐ b. repaired pump/lift station ☐ c. repaired service connection

☐ d. drained or pumped sewage out of building ☐ e. disinfection treatment ☐ f. backflow prevention device installed

☐ g. Other: h. Specify

D. General Information About Anticipated Bypass

1. When will the bypass occur? a. Date (mm/dd/yyyy) Time: b. hh:mm ☐ c. am ☐ d. pm

2. Where will the bypass occur? a. Number and Street (or closest address) b. latitude c. longitude

3. Estimated volume of overflow discharge at the time of this report (select one):

☐ a. < 100,000 gallons (MG) ☐ b. > 100,000 gal. and < 1 MG ☐ c. > 1 million gallons (MG)

d. Method of estimating volume:

4. Identify causes of/reasons for the event: (select all that apply)

☐ a. rain ☐ b. snowmelt ☐ c. high groundwater

☐ d. insufficient capacity ☐ e. sewer system blockage or collapse

☐ f. pump/lift station failure ☐ g. treatment facility equipment failure

☐ g. Other: i. Specify

5. Will an SSO occur during the bypass? ☐ a. Yes

a.1. Where will SSO discharge to?

A 5-day follow-up report is required for the SSO.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notification Form

FOR DEP USE ONLY

Tax Identification Number

D. General Information About Anticipated Bypass (cont.)

5. ☐ b. No

Please be advised that if the anticipated bypass detailed above results in an unanticipated bypass/SSO, MassDEP must be notified within 24 hours and a new form completed.

Please provide comments in Section E detailing the preventive measures to be taken during the event.

E. Comments/Attachments/Follow-up

I wish to provide (select all that apply):

☐ 1. Attachment ☐ 2. Additional comments below: ☐ 3. No additional comments or attachments

2a. Additional comments and planned actions:

F. Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

1. Signature of Authorized Representative

4-20-16
2. Date Signed

Please keep a copy of this report for your records. When submitting additional information, include the MassDEP Incident Number from this report.

MassDEP Regional Office and EPA Telephone and Fax Numbers:

Northeast Region	Phone: 978-694-3215	Fax: 978-694-3499
Southeast Region	Phone: 508-946-2750	Fax: 508-947-6557
Central Region	Phone: 508-792-7650	Fax: 508-792-7621
Western Region	Phone: 413-784-1100	Fax: 413-784-1149
EPA Contact	Phone: 617-918-1766	
DEP 24-hour emergency	Phone: 888-304-1133	

Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Watershed Permitting Program

FOR DEP USE ONLY

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

Tax Identification Number

A. Reporting Facility

1. Facility Information

Springfield Water and Sewer Commision	0101613 & 0103331
Reporting Sewer Authority	Permit #

2. Autorized Representative Transmitting Form:

Ryan Wingerter	413-787-6256 x128
Name	Telephone #
Deputy Director of Wastewater Operations	ryan.wingerter@waterandsewer.org
Title	Email Address

B. Phone Notifications

MassDEP Staff Contacted:		
Date/Time Contacted:		
EPA Staff Contacted:	John	Melcher
Date/Time Contacted:	10/22/2016	4:05 PM
Board of Health Contacted:		
Date/Time Contacted:		

Others Notified:

☐ Harbormaster ☐ Shellfish Warden ☐ Conservation Commision ☐ Division of Marine Fisheries

☐ Downstream Drinking Water Supply ☐ Watershed Association ☐ Beach Resource Manager

☐ Other:

C. SSO Information

1. SSO Discovered By: Homeowner

Date/Time Discovered:	10/22/2016	9:24 AM
2. SSO Date/Time Stopped:	10/22/2016	12:30 PM

3. SSO Discharge From: ☐ Sanitary Sewer Manhole ☐ Pump Station ☒ Backup Into Property

☐ Other:

4. SSO Discharge To: ☐ Ground Surface (no release to surface water)

☐ Direct to Receiving Water (surface water)

☐ Catch Basin to Receiving Water (surface water)

☒ Backup Into Property Basement

Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

FOR DEP USE ONLY

Tax Identification Number

C. SSO Information (cont.)

Location: 14 Pomona St
(description of discharge site or closest address)

5. Estimated SSO Volume at Time of This Report: < 10,000 gal

Method of Estimating Volume: Visual inspection of basement

6.Cause of SSO Event

- [ ] Rain Event
- [ ] Pump Station Failure
- [ ] Insufficient Capacity in System
- [ ] Treatment Unit Failure
- [X] Sewer System Blockage
- [ ] Pipe Collapse
- [ ] Root Intrusion
- [X] Grease Blockage
- [ ] Other:

7. Corrective Actions Taken

Sanitary main was cleared via jetting

Impact Area Cleaned and/or Disinfected: [ ] Yes [X] No

Corrective Actions Completed: [ ] Yes [X] No

Follow up cleaning and preventative maintenance will help to maintain proper operating conditions.

D. Comments/Attachments/Follow-up

I wish to provide (select all that apply):

- [ ] Attachment
- [ ] Additional Comments Below
- [ ] No Additional Comments or Attachments

Additional Comments and Planned Actions:

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

FOR DEP USE ONLY

Tax Identification Number

E. Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative

10-22-16
Date Signed

Please keep a copy of this report for your records. When submitting additional information, include the MassDEP Incident Number from this report.

MassDEP Regional Office and EPA Telephone and Fax Numbers:

Northeast Region	Phone: 978-694-3215	Fax: 978-694-3499
Southeast Region	Phone: 508-946-2750	Fax: 508-947-6557
Central Region	Phone: 508-792-7650	Fax: 508-792-7621
Western Region	Phone: 413-784-1100	Fax: 413-784-1149
EPA Contact	Phone: 617-918-1870	Fax: 617-918-0870
DEP 24-Hour Emergency	Phone: 888-304-1133	

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Watershed Permitting Program

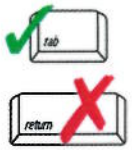
Sanitary Sewer Overflow (SSO)/Bypass Notification Form

FOR DEP USE ONLY

Tax Identification Number

A. Reporting Facility

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



1. Facility Information

Springfield Water and Sewer Commission — Reporting Sewer Authority
0101613 & 0103331 — Permit #

2. Authorized Representative Transmitting Form:

Ryan — First Name
Wingerter — Last Name
413-787-6256 x128 — Telephone No.
Collection System Superintendent — Title
ryan.wingerter@waterandsewer.org — E-mail Address

B. Phone Notifications:

See DEP Regional Office telephone and fax numbers at the end of this form.

1. **MassDEP staff** contacted: _____ first name _____ last name
   Date/Time contacted: _____ Date _____ Time ☐ am ☐ pm
2. **EPA staff** contacted: _____ first name _____ last name
   Date/Time EPA contacted: _____ Date _____ Time ☐ am ☐ pm
3. Board of Health contacted: _____ First Name _____ Last Name
   Date/Time contacted: _____ Date _____ Time ☐ am ☐ pm
4. Others notified (select all that apply); ☐ Conservation Commission
   ☐ Harbormaster ☐ Shellfish Warden ☐ Division of Marine Fisheries
   ☐ Downstream Drinking Water Supplier ☐ Watershed Association
   ☐ Beach Resource Manager ☐ Other: _____ (specify)

C. SSO Information

1. SSO Discovered: 11-19-16 Date 3:20 Time ☐ am ☒ pm
   By: Customer
2. SSO Stopped: 11-19-16 Date 5:00 Time ☐ am ☒ pm
3. SSO Discharge from: ☐ Sanitary Sewer Manhole ☐ Pump Station
   ☐ Backup into Property ☒ Other: Sanitary Sewer Mainline (specify)
4. SSO Discharge to: ☐ Ground Surface (no release to surface water)
   ☐ Direct to Receiving Water _____ (surface water)
   ☐ Catch basin to Receiving Water _____ (surface water)
   ☒ Backup into Property Basement

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notification Form

FOR DEP USE ONLY

Tax Identification Number

C. SSO Information (cont.)

Location: 64 West Allen Ridge Road
(Description of discharge site or closest address)

5. Estimated SSO Volume at time of this Report: <10,000 Gallons

   Method of Estimating Volume: Visual

6. Cause of SSO Event:

   ☐ Rain Event ☐ Pump Station Failure ☐ Insufficient Capacity in System

   ☐ Treatment Unit failure

   ☒ Sewer System Blockage: ☐ Pipe Collapse ☒ Root Intrusion ☒ Grease Blockage

   ☐ Other: (Specify)

7. Corrective Actions Taken:

   Sanitary Sewer mainline was jetted and blockage was cleared.

   Impact Area cleaned and/or disinfected: ☐ Yes ☒ No

   Corrective Actions Completed: ☒ Yes ☐ No

D. Comments/Attachments/Follow-up

I wish to provide (select all that apply):

☐ Attachment ☐ Additional comments below: ☒ No additional comments or attachments

Additional comments and planned actions:

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notification Form

FOR DEP USE ONLY

Tax Identification Number

E. Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative

4-21-16
Date Signed

Please keep a copy of this report for your records. When submitting additional information, include the MassDEP Incident Number from this report.

MassDEP Regional Office and EPA Telephone and Fax Numbers:

Northeast Region	Phone: 978-694-3215	Fax: 978-694-3499
Southeast Region	Phone: 508-946-2750	Fax: 508-947-6557
Central Region	Phone: 508-792-7650	Fax: 508-792-7621
Western Region	Phone: 413-784-1100	Fax: 413-784-1149
EPA Contact	Phone: 617-918-1870	Fax: 617-918-0870
DEP 24-hour emergency	Phone: 888-304-1133	

Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Watershed Permitting Program

FOR DEP USE ONLY

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

Tax Identification Number

A. Reporting Facility

1. Facility Information

Springfield Water and Sewer Commision — Reporting Sewer Authority

0101613 & 0103331 — Permit #

2. Autorized Representative Transmitting Form:

Ryan Wingerter — Name

413-787-6256 x128 — Telephone #

Deputy Director of Wastewater Operations — Title

ryan.wingerter@waterandsewer.org — Email Address

B. Phone Notifications

MassDEP Staff Contacted: _____ _____

Date/Time Contacted: _____ _____

EPA Staff Contacted: _____ _____

Date/Time Contacted: _____ _____

Board of Health Contacted: _____ _____

Date/Time Contacted: _____ _____

Others Notified:

☐ Harbormaster ☐ Shellfish Warden ☐ Conservation Commision ☐ Division of Marine Fisheries

☐ Downstream Drinking Water Supply ☐ Watershed Association ☐ Beach Resource Manager

☐ Other: _____

C. SSO Information

1. SSO Discovered By: CUSTOMER

Date/Time Discovered: 9/19/2016 10:25 AM

2. SSO Date/Time Stopped: 9/19/2016 11:25 AM

3. SSO Discharge From: ☐ Sanitary Sewer Manhole ☐ Pump Station ☒ Backup Into Property

☐ Other: _____

4. SSO Discharge To: ☐ Ground Surface (no release to surface water)

☐ Direct to Receiving Water _____ (surface water)

☐ Catch Basin to Receiving Water _____ (surface water)

☒ Backup Into Property Basement

Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

FOR DEP USE ONLY

Tax Identification Number

C. SSO Information (cont.)

Location: 105 Ingersoll Gr.
(description of discharge site or closest address)

5. Estimated SSO Volume at Time of This Report: < 10,000 gal

Method of Estimating Volume: Visual inspection of basement after back-up

6.Cause of SSO Event

[X] Rain Event [ ] Pump Station Failure [ ] Insufficient Capacity in System [ ] Treatment Unit Failure

[ ] Sewer System Blockage [ ] Pipe Collapse [ ] Root Intrusion [ ] Grease Blockage

[ ] Other:

7. Corrective Actions Taken

Crews assessed the situation and determined the backup was caused by the rain event. Combined sewer wet weather capacity related issues that result in SSOs are tracked, trended, and regularly prioritized in an asset management system and addressed through the annual capital planning program.

Impact Area Cleaned and/or Disinfected: [ ] Yes [X] No

Corrective Actions Completed: [X] Yes [ ] No

D. Comments/Attachments/Follow-up

I wish to provide (select all that apply):

[ ] Attachment [ ] Additional Comments Below [ ] No Additional Comments or Attachments

Additional Comments and Planned Actions:

FOR DEP USE ONLY

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

Tax Identification Number

E. Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative

12-8-16
Date Signed

Please keep a copy of this report for your records. When submitting additional information, include the MassDEP Incident Number from this report.

MassDEP Regional Office and EPA Telephone and Fax Numbers:

Northeast Region	Phone: 978-694-3215	Fax: 978-694-3499
Southeast Region	Phone: 508-946-2750	Fax: 508-947-6557
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Western Region	Phone: 413-784-1100	Fax: 413-784-1149
EPA Contact	Phone: 617-918-1870	Fax: 617-918-0870
DEP 24-Hour Emergency	Phone: 888-304-1133	

Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

FOR DEP USE ONLY

Tax Identification Number

A. Reporting Facility

1. Facility Information

Springfield Water and Sewer Commision — Reporting Sewer Authority

0101613 & 0103331 — Permit #

2. Autorized Representative Transmitting Form:

Ryan Wingerter — Name

413-787-6256 x128 — Telephone #

Deputy Director of Wastewater Operations — Title

ryan.wingerter@waterandsewer.org — Email Address

B. Phone Notifications

MassDEP Staff Contacted:

Date/Time Contacted:

EPA Staff Contacted:

Date/Time Contacted:

Board of Health Contacted:

Date/Time Contacted:

Others Notified:

☐ Harbormaster ☐ Shellfish Warden ☐ Conservation Commision ☐ Division of Marine Fisheries

☐ Downstream Drinking Water Supply ☐ Watershed Association ☐ Beach Resource Manager

☐ Other:

C. SSO Information

1. SSO Discovered By: CUSTOMER

Date/Time Discovered: 9/21/2016 12:48 PM

2. SSO Date/Time Stopped: 9/21/2016 1:48 PM

3. SSO Discharge From: ☐ Sanitary Sewer Manhole ☐ Pump Station ☐ Backup Into Property

☐ Other:

4. SSO Discharge To: ☐ Ground Surface (no release to surface water)

☐ Direct to Receiving Water (surface water)

☐ Catch Basin to Receiving Water (surface water)

☒ Backup Into Property Basement

Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

FOR DEP USE ONLY

Tax Identification Number

C. SSO Information (cont.)

Location: 126 Governor St.
(description of discharge site or closest address)

5. Estimated SSO Volume at Time of This Report: < 10,000 gal

Method of Estimating Volume: Visual inspection of basement after back-up

6.Cause of SSO Event

[X] Rain Event [ ] Pump Station Failure [ ] Insufficient Capacity in System [ ] Treatment Unit Failure

[ ] Sewer System Blockage [ ] Pipe Collapse [ ] Root Intrusion [ ] Grease Blockage

[ ] Other:

7. Corrective Actions Taken

Crews assessed the situation and determined the backup was caused by the rain event. Combined sewer wet weather capacity related issues that result in SSOs are tracked, trended, and regularly prioritized in an asset management system and addressed through the annual capital planning program.

Impact Area Cleaned and/or Disinfected: [ ] Yes [X] No

Corrective Actions Completed: [X] Yes [ ] No

D. Comments/Attachments/Follow-up

I wish to provide (select all that apply):

[ ] Attachment [ ] Additional Comments Below [ ] No Additional Comments or Attachments

Additional Comments and Planned Actions:

Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

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Tax Identification Number

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Signature of Authorized Representative

12-8-16

Date Signed

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Southeast Region	Phone: 508-946-2750	Fax: 508-947-6557
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Western Region	Phone: 413-784-1100	Fax: 413-784-1149
EPA Contact	Phone: 617-918-1870	Fax: 617-918-0870
DEP 24-Hour Emergency	Phone: 888-304-1133	

Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Watershed Permitting Program

FOR DEP USE ONLY

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

Tax Identification Number

A. Reporting Facility

1. Facility Information

Springfield Water and Sewer Commision	0101613 & 0103331
Reporting Sewer Authority	Permit #

2. Autorized Representative Transmitting Form:

Ryan Wingerter	413-787-6256 x128
Name	Telephone #
Deputy Director of Wastewater Operations	ryan.wingerter@waterandsewer.org
Title	Email Address

B. Phone Notifications

MassDEP Staff Contacted:

Date/Time Contacted:

EPA Staff Contacted:

Date/Time Contacted:

Board of Health Contacted:

Date/Time Contacted:

Others Notified:

☐ Harbormaster ☐ Shellfish Warden ☐ Conservation Commision ☐ Division of Marine Fisheries

☐ Downstream Drinking Water Supply ☐ Watershed Association ☐ Beach Resource Manager

☐ Other:

C. SSO Information

1. SSO Discovered By: CUSTOMER

Date/Time Discovered: 9/19/2016 11:25 AM

2. SSO Date/Time Stopped: 9/19/2016 12:25 PM

3. SSO Discharge From: ☐ Sanitary Sewer Manhole ☐ Pump Station ☒ Backup Into Property

☐ Other:

4. SSO Discharge To: ☐ Ground Surface (no release to surface water)

☐ Direct to Receiving Water (surface water)

☐ Catch Basin to Receiving Water (surface water)

☒ Backup Into Property Basement

Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

FOR DEP USE ONLY

Tax Identification Number

C. SSO Information (cont.)

Location: 136 Myrtle St.
(description of discharge site or closest address)

5. Estimated SSO Volume at Time of This Report: < 10,000 gal

Method of Estimating Volume: Visual inspection after back-up

6.Cause of SSO Event

[X] Rain Event [ ] Pump Station Failure [ ] Insufficient Capacity in System [ ] Treatment Unit Failure

[ ] Sewer System Blockage [ ] Pipe Collapse [ ] Root Intrusion [ ] Grease Blockage

[ ] Other:

7. Corrective Actions Taken

Crews assessed the situation and determined the backup was caused by the rain event Combined sewer wet weather capacity related issues that result in SSOs are tracked, trended, and regularly prioritized in an asset management system and addressed through the annual capital planning program

Impact Area Cleaned and/or Disinfected: [ ] Yes [X] No

Corrective Actions Completed: [X] Yes [ ] No

D. Comments/Attachments/Follow-up

I wish to provide (select all that apply):

[ ] Attachment [ ] Additional Comments Below [ ] No Additional Comments or Attachments

Additional Comments and Planned Actions:

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

FOR DEP USE ONLY

Tax Identification Number

E. Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative

12-8-16
Date Signed

Please keep a copy of this report for your records. When submitting additional information, include the MassDEP Incident Number from this report.

MassDEP Regional Office and EPA Telephone and Fax Numbers:

Northeast Region	Phone: 978-694-3215	Fax: 978-694-3499
Southeast Region	Phone: 508-946-2750	Fax: 508-947-6557
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Western Region	Phone: 413-784-1100	Fax: 413-784-1149
EPA Contact	Phone: 617-918-1870	Fax: 617-918-0870
DEP 24-Hour Emergency	Phone: 888-304-1133	

Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Watershed Permitting Program

FOR DEP USE ONLY

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

Tax Identification Number

A. Reporting Facility

1. Facility Information

Springfield Water and Sewer Commision — Reporting Sewer Authority

0101613 & 0103331 — Permit #

2. Autorized Representative Transmitting Form:

Ryan Wingerter — Name

413-787-6256 x128 — Telephone #

Deputy Director of Wastewater Operations — Title

ryan.wingerter@waterandsewer.org — Email Address

B. Phone Notifications

MassDEP Staff Contacted: _____ _____

Date/Time Contacted: _____ _____

EPA Staff Contacted: _____ _____

Date/Time Contacted: _____ _____

Board of Health Contacted: _____ _____

Date/Time Contacted: _____ _____

Others Notified:

☐ Harbormaster ☐ Shellfish Warden ☐ Conservation Commision ☐ Division of Marine Fisheries

☐ Downstream Drinking Water Supply ☐ Watershed Association ☐ Beach Resource Manager

☐ Other: _____

C. SSO Information

1. SSO Discovered By: Keith Ouellette

Date/Time Discovered: 12/31/2016 3:57 PM

2. SSO Date/Time Stopped: 12/31/2016 9:00 PM

3. SSO Discharge From: ☐ Sanitary Sewer Manhole ☐ Pump Station ☒ Backup Into Property

☐ Other: _____

4. SSO Discharge To: ☐ Ground Surface (no release to surface water)

☐ Direct to Receiving Water _____ (surface water)

☐ Catch Basin to Receiving Water _____ (surface water)

☒ Backup Into Property Basement

Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

FOR DEP USE ONLY

Tax Identification Number

C. SSO Information (cont.)

Location: 136 Talmadge St
(description of discharge site or closest address)

5. Estimated SSO Volume at Time of This Report: < 1,000 gal

Method of Estimating Volume: visual

6.Cause of SSO Event

☐ Rain Event ☐ Pump Station Failure ☐ Insufficient Capacity in System ☐ Treatment Unit Failure

☐ Sewer System Blockage ☐ Pipe Collapse ☐ Root Intrusion ☒ Grease Blockage

☐ Other:

7. Corrective Actions Taken

Sanitary main was cleaned and blockage was removed

Impact Area Cleaned and/or Disinfected: ☐ Yes ☒ No

Corrective Actions Completed: ☒ Yes ☐ No

Collection system was cleaned and chemically treated with degreaser.

D. Comments/Attachments/Follow-up

I wish to provide (select all that apply):

☐ Attachment ☐ Additional Comments Below ☐ No Additional Comments or Attachments

Additional Comments and Planned Actions:

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

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Tax Identification Number

E. Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative

1-3-17
Date Signed

Please keep a copy of this report for your records. When submitting additional information, include the MassDEP Incident Number from this report.

MassDEP Regional Office and EPA Telephone and Fax Numbers:

Northeast Region	Phone: 978-694-3215	Fax: 978-694-3499
Southeast Region	Phone: 508-946-2750	Fax: 508-947-6557
Central Region	Phone: 508-792-7650	Fax: 508-792-7621
Western Region	Phone: 413-784-1100	Fax: 413-784-1149
EPA Contact	Phone: 617-918-1870	Fax: 617-918-0870
DEP 24-Hour Emergency	Phone: 888-304-1133	

Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Watershed Permitting Program

FOR DEP USE ONLY

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

Tax Identification Number

A. Reporting Facility

1. Facility Information

Springfield Water and Sewer Commision — Reporting Sewer Authority

0101613 & 0103331 — Permit #

2. Autorized Representative Transmitting Form:

Ryan Wingerter — Name

413-787-6256 x128 — Telephone #

Deputy Director of Wastewater Operations — Title

ryan.wingerter@waterandsewer.org — Email Address

B. Phone Notifications

MassDEP Staff Contacted:

Date/Time Contacted:

EPA Staff Contacted:

Date/Time Contacted:

Board of Health Contacted:

Date/Time Contacted:

Others Notified:

☐ Harbormaster ☐ Shellfish Warden ☐ Conservation Commision ☐ Division of Marine Fisheries

☐ Downstream Drinking Water Supply ☐ Watershed Association ☐ Beach Resource Manager

☐ Other:

C. SSO Information

1. SSO Discovered By: CUSTOMER

Date/Time Discovered: 9/19/2016 2:41 PM

2. SSO Date/Time Stopped: 9/19/2016 3:41 PM

3. SSO Discharge From: ☐ Sanitary Sewer Manhole ☐ Pump Station ☒ Backup Into Property

☐ Other:

4. SSO Discharge To: ☐ Ground Surface (no release to surface water)

☐ Direct to Receiving Water (surface water)

☐ Catch Basin to Receiving Water (surface water)

☒ Backup Into Property Basement

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

FOR DEP USE ONLY

Tax Identification Number

C. SSO Information (cont.)

Location: 149 Walnut St.
(description of discharge site or closest address)

5. Estimated SSO Volume at Time of This Report: < 10,000 gal

Method of Estimating Volume: Visual inspection of basement after back-up

6.Cause of SSO Event

[X] Rain Event [ ] Pump Station Failure [ ] Insufficient Capacity in System [ ] Treatment Unit Failure

[ ] Sewer System Blockage [ ] Pipe Collapse [ ] Root Intrusion [ ] Grease Blockage

[ ] Other:

7. Corrective Actions Taken

Crews assessed the situation and determined the backup was caused by the rain event. Combined sewer wet weather capacity related issues that result in SSOs are tracked, trended, and regularly prioritized in an asset management system and addressed through the annual capital planning program.

Impact Area Cleaned and/or Disinfected: [ ] Yes [X] No

Corrective Actions Completed: [X] Yes [ ] No

D. Comments/Attachments/Follow-up

I wish to provide (select all that apply):

[ ] Attachment [ ] Additional Comments Below [ ] No Additional Comments or Attachments

Additional Comments and Planned Actions:

Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

FOR DEP USE ONLY

Tax Identification Number

E. Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative

12-8-16

Date Signed

Please keep a copy of this report for your records. When submitting additional information, include the MassDEP Incident Number from this report.

MassDEP Regional Office and EPA Telephone and Fax Numbers:

Northeast Region	Phone: 978-694-3215	Fax: 978-694-3499
Southeast Region	Phone: 508-946-2750	Fax: 508-947-6557
Central Region	Phone: 508-792-7650	Fax: 508-792-7621
Western Region	Phone: 413-784-1100	Fax: 413-784-1149
EPA Contact	Phone: 617-918-1870	Fax: 617-918-0870
DEP 24-Hour Emergency	Phone: 888-304-1133	

Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Watershed Permitting Program

FOR DEP USE ONLY

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

Tax Identification Number

A. Reporting Facility

1. Facility Information

Springfield Water and Sewer Commision	0101613 & 0103331
Reporting Sewer Authority	Permit #

2. Autorized Representative Transmitting Form:

Ryan Wingerter	413-787-6256 x128
Name	Telephone #
Deputy Director of Wastewater Operations	ryan.wingerter@waterandsewer.org
Title	Email Address

B. Phone Notifications

MassDEP Staff Contacted:		
Date/Time Contacted:		
EPA Staff Contacted:	John	Melcher
Date/Time Contacted:	11/25/2016	7:27 AM
Board of Health Contacted:		
Date/Time Contacted:		

Others Notified:

☐ Harbormaster ☐ Shellfish Warden ☐ Conservation Commision ☐ Division of Marine Fisheries

☐ Downstream Drinking Water Supply ☐ Watershed Association ☐ Beach Resource Manager

☐ Other:

C. SSO Information

1. SSO Discovered By: Homeowner or 154 Packard ave.

Date/Time Discovered:	11/24/2016	2:31 PM
2. SSO Date/Time Stopped:	11/24/2016	5:15 PM

3. SSO Discharge From: ☒ Sanitary Sewer Manhole ☐ Pump Station ☐ Backup Into Property

☐ Other:

4. SSO Discharge To: ☒ Ground Surface (no release to surface water)

☐ Direct to Receiving Water Watershop Pond (surface water)

☐ Catch Basin to Receiving Water Watershop Pond (surface water)

☐ Backup Into Property Basement

Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Watershed Permitting Program

FOR DEP USE ONLY

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

Tax Identification Number

C. SSO Information (cont.)

Location: Back yard of house # 154 Packard Ave.
(description of discharge site or closest address)

5. Estimated SSO Volume at Time of This Report: < 10,000 gal

Method of Estimating Volume: Visual inspection of area

6.Cause of SSO Event

☐ Rain Event ☐ Pump Station Failure ☐ Insufficient Capacity in System ☐ Treatment Unit Failure

☒ Sewer System Blockage ☐ Pipe Collapse ☐ Root Intrusion ☐ Grease Blockage

☐ Other:

7. Corrective Actions Taken

Sanitary main was cleaned and blockage removed. Sanitary main will have follow up cleaning.

Impact Area Cleaned and/or Disinfected: ☐ Yes ☒ No

No clean up necessary due to minimal discharge.

Corrective Actions Completed: ☐ Yes ☒ No

D. Comments/Attachments/Follow-up

I wish to provide (select all that apply):

☐ Attachment ☐ Additional Comments Below ☐ No Additional Comments or Attachments

Additional Comments and Planned Actions:

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

Tax Identification Number

E. Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative

11-28-16
Date Signed

Please keep a copy of this report for your records. When submitting additional information, include the MassDEP Incident Number from this report.

MassDEP Regional Office and EPA Telephone and Fax Numbers:

Northeast Region	Phone: 978-694-3215	Fax: 978-694-3499
Southeast Region	Phone: 508-946-2750	Fax: 508-947-6557
Central Region	Phone: 508-792-7650	Fax: 508-792-7621
Western Region	Phone: 413-784-1100	Fax: 413-784-1149
EPA Contact	Phone: 617-918-1870	Fax: 617-918-0870
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Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Watershed Permitting Program

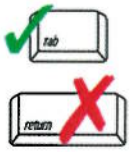
Sanitary Sewer Overflow (SSO)/Bypass Notification Form

FOR DEP USE ONLY

Tax Identification Number

A. Reporting Facility

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



1. Facility Information

Springfield Water and Sewer Commission (Reporting Sewer Authority) — 0101613 & 0103331 (Permit #)

2. Authorized Representative Transmitting Form:

Ryan (First Name) | Wingerter (Last Name) | 413-787-6256 x128 (Telephone No.)

Collection System Superintendent (Title) | ryan.wingerter@waterandsewer.org (E-mail Address)

B. Phone Notifications:

See DEP Regional Office telephone and fax numbers at the end of this form.

1. **MassDEP staff** contacted: _____ (first name) _____ (last name)

   Date/Time contacted: _____ (Date) _____ (Time) ☐ am ☐ pm

2. **EPA staff** contacted: _____ (first name) _____ (last name)

   Date/Time EPA contacted: _____ (Date) _____ (Time) ☐ am ☐ pm

3. Board of Health contacted: _____ (First Name) _____ (Last Name)

   Date/Time contacted: _____ (Date) _____ (Time) ☐ am ☐ pm

4. Others notified (select all that apply); ☐ Conservation Commission

   ☐ Harbormaster ☐ Shellfish Warden ☐ Division of Marine Fisheries

   ☐ Downstream Drinking Water Supplier ☐ Watershed Association

   ☐ Beach Resource Manager ☐ Other: _____ (specify)

C. SSO Information

1. SSO Discovered: 5-24-16 (Date) 9:45 (Time) ☐ am ☒ pm

   By: Customer

2. SSO Stopped: 5-24-16 (Date) 10:06 (Time) ☐ am ☒ pm

3. SSO Discharge from: ☐ Sanitary Sewer Manhole ☐ Pump Station

   ☐ Backup into Property ☒ Other: Sanitary Main (specify)

4. SSO Discharge to: ☐ Ground Surface (no release to surface water)

   ☐ Direct to Receiving Water _____ (surface water)

   ☐ Catch basin to Receiving Water _____ (surface water)

   ☒ Backup into Property Basement

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notification Form

FOR DEP USE ONLY

Tax Identification Number

C. SSO Information (cont.)

Location: 332 Dorset St
(Description of discharge site or closest address)

5. Estimated SSO Volume at time of this Report: <10,000 Gallons

   Method of Estimating Volume: Visual

6. Cause of SSO Event:

   ☐ Rain Event ☐ Pump Station Failure ☐ Insufficient Capacity in System

   ☐ Treatment Unit failure

   ☒ Sewer System Blockage: ☐ Pipe Collapse ☐ Root Intrusion ☒ Grease Blockage

   ☐ Other: _____
   (Specify)

7. Corrective Actions Taken:

   Sanitary main was jetted and blockage removed.

   Impact Area cleaned and/or disinfected: ☐ Yes ☒ No

   Corrective Actions Completed: ☒ Yes ☐ No

D. Comments/Attachments/Follow-up

I wish to provide (select all that apply):

☐ Attachment ☐ Additional comments below: ☐ No additional comments or attachments

Additional comments and planned actions:

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notification Form

FOR DEP USE ONLY

Tax Identification Number

E. Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative

5-26-16
Date Signed

Please keep a copy of this report for your records. When submitting additional information, include the MassDEP Incident Number from this report.

MassDEP Regional Office and EPA Telephone and Fax Numbers:

Northeast Region	Phone: 978-694-3215	Fax: 978-694-3499
Southeast Region	Phone: 508-946-2750	Fax: 508-947-6557
Central Region	Phone: 508-792-7650	Fax: 508-792-7621
Western Region	Phone: 413-784-1100	Fax: 413-784-1149
EPA Contact	Phone: 617-918-1870	Fax: 617-918-0870
DEP 24-hour emergency	Phone: 888-304-1133	

Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Watershed Permitting Program

FOR DEP USE ONLY

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

Tax Identification Number

A. Reporting Facility

1. Facility Information

Springfield Water and Sewer Commision	0101613 & 0103331
Reporting Sewer Authority	Permit #

2. Autorized Representative Transmitting Form:

Ryan Wingerter	413-787-6256 x128
Name	Telephone #
Deputy Director of Wastewater Operations	ryan.wingerter@waterandsewer.org
Title	Email Address

B. Phone Notifications

MassDEP Staff Contacted: _____ _____

Date/Time Contacted: _____ _____

EPA Staff Contacted: _____ _____

Date/Time Contacted: _____ _____

Board of Health Contacted: _____ _____

Date/Time Contacted: _____ _____

Others Notified:

☐ Harbormaster ☐ Shellfish Warden ☐ Conservation Commision ☐ Division of Marine Fisheries

☐ Downstream Drinking Water Supply ☐ Watershed Association ☐ Beach Resource Manager

☐ Other: _____

C. SSO Information

1. SSO Discovered By: CUSTOMER

Date/Time Discovered: 8/10/2016 8:00 AM

2. SSO Date/Time Stopped: 8/10/2016 9:00 AM

3. SSO Discharge From: ☐ Sanitary Sewer Manhole ☐ Pump Station ☒ Backup Into Property

☐ Other: _____

4. SSO Discharge To: ☐ Ground Surface (no release to surface water)

☐ Direct to Receiving Water _____ (surface water)

☐ Catch Basin to Receiving Water _____ (surface water)

☒ Backup Into Property Basement

Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

FOR DEP USE ONLY

Tax Identification Number

C. SSO Information (cont.)

Location: 363-365 Worthington St
(description of discharge site or closest address)

5. Estimated SSO Volume at Time of This Report: < 10,000 gal

Method of Estimating Volume: Visual inspection of basement after back-up

6.Cause of SSO Event

[X] Rain Event [ ] Pump Station Faiture [ ] Insufficient Capacity in System [ ] Treatment Unit Failure

[ ] Sewer System Blockage [ ] Pipe Collapse [ ] Root Intrusion [ ] Grease Blockage

[ ] Other:

7. Corrective Actions Taken

Crews assessed that situation and determined the backup was caused by the rain event Combined sewer wet weather capacity related issues that result in SSOs are tracked, trended and regularly prioritized in an asset management system and address through the annual capital planning program

Impact Area Cleaned and/or Disinfected: [ ] Yes [X] No

Corrective Actions Completed: [X] Yes [ ] No

D. Comments/Attachments/Follow-up

I wish to provide (select all that apply):

[ ] Attachment [ ] Additional Comments Below [ ] No Additional Comments or Attachments

Additional Comments and Planned Actions:

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

FOR DEP USE ONLY

Tax Identification Number

E. Certification Statement

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Signature of Authorized Representative

12-8-16
Date Signed

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Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Watershed Permitting Program

FOR DEP USE ONLY

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

Tax Identification Number

A. Reporting Facility

1. Facility Information

Springfield Water and Sewer Commision	0101613 & 0103331
Reporting Sewer Authority	Permit #

2. Autorized Representative Transmitting Form:

Ryan Wingerter	413-787-6256 x128
Name	Telephone #
Deputy Director of Wastewater Operations	ryan.wingerter@waterandsewer.org
Title	Email Address

B. Phone Notifications

MassDEP Staff Contacted: _____ _____

Date/Time Contacted: _____ _____

EPA Staff Contacted: _____ _____

Date/Time Contacted: _____ _____

Board of Health Contacted: _____ _____

Date/Time Contacted: _____ _____

Others Notified:

☐ Harbormaster ☐ Shellfish Warden ☐ Conservation Commision ☐ Division of Marine Fisheries

☐ Downstream Drinking Water Supply ☐ Watershed Association ☐ Beach Resource Manager

☐ Other: _____

C. SSO Information

1. SSO Discovered By: CUSTOMER

Date/Time Discovered: 9/21/2016 12:50 PM

2. SSO Date/Time Stopped: 9/21/2016 1:50 PM

3. SSO Discharge From: ☐ Sanitary Sewer Manhole ☐ Pump Station ☒ Backup Into Property

☐ Other: _____

4. SSO Discharge To: ☐ Ground Surface (no release to surface water)

☐ Direct to Receiving Water _____ (surface water)

☐ Catch Basin to Receiving Water _____ (surface water)

☒ Backup Into Property Basement

Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

FOR DEP USE ONLY

Tax Identification Number

C. SSO Information (cont.)

Location: 563 Union St
(description of discharge site or closest address)

5. Estimated SSO Volume at Time of This Report: < 10,000 gal

Method of Estimating Volume: Visual inspection of basement after back-up

6.Cause of SSO Event

[X] Rain Event [ ] Pump Station Failure [ ] Insufficient Capacity in System [ ] Treatment Unit Failure

[ ] Sewer System Blockage [ ] Pipe Collapse [ ] Root Intrusion [ ] Grease Blockage

[ ] Other:

7. Corrective Actions Taken

Crews assessed the situation and determined the backup was caused by the rain event Combined sewer wet weather capacity related issues that result in SSOs are tracked, trended and regularly prioritized in an asset management system and addressed through the annual capital planning program

Impact Area Cleaned and/or Disinfected: [ ] Yes [X] No

Corrective Actions Completed: [X] Yes [ ] No

D. Comments/Attachments/Follow-up

I wish to provide (select all that apply):

[ ] Attachment [ ] Additional Comments Below [ ] No Additional Comments or Attachments

Additional Comments and Planned Actions:

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

FOR DEP USE ONLY

Tax Identification Number

E. Certification Statement

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Signature of Authorized Representative

12-8-16
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Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Watershed Permitting Program

FOR DEP USE ONLY

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

Tax Identification Number

A. Reporting Facility

1. Facility Information

Springfield Water and Sewer Commision	0101613 & 0103331
Reporting Sewer Authority	Permit #

2. Autorized Representative Transmitting Form:

Ryan Wingerter	413-787-6256 x128
Name	Telephone #
Deputy Director of Wastewater Operations	ryan.wingerter@waterandsewer.org
Title	Email Address

B. Phone Notifications

MassDEP Staff Contacted: _____ _____

Date/Time Contacted: _____ _____

EPA Staff Contacted: _____ _____

Date/Time Contacted: _____ _____

Board of Health Contacted: _____ _____

Date/Time Contacted: _____ _____

Others Notified:

☐ Harbormaster ☐ Shellfish Warden ☐ Conservation Commision ☐ Division of Marine Fisheries

☐ Downstream Drinking Water Supply ☐ Watershed Association ☐ Beach Resource Manager

☐ Other: _____

C. SSO Information

1. SSO Discovered By: CUSTOMER

Date/Time Discovered: 9/19/2016 2:10 PM

2. SSO Date/Time Stopped: 9/19/2016 3:10 PM

3. SSO Discharge From: ☐ Sanitary Sewer Manhole ☐ Pump Station ☒ Backup Into Property

☐ Other: _____

4. SSO Discharge To: ☐ Ground Surface (no release to surface water)

☐ Direct to Receiving Water _____ (surface water)

☐ Catch Basin to Receiving Water _____ (surface water)

☒ Backup Into Property Basement

Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

FOR DEP USE ONLY

Tax Identification Number

C. SSO Information (cont.)

Location: 1323 Worcester St. (I.O.)
(description of discharge site or closest address)

5. Estimated SSO Volume at Time of This Report: < 10,000 gal

Method of Estimating Volume: Visual inspection of basemant after back-up

6.Cause of SSO Event

[X] Rain Event [ ] Pump Station Failure [ ] Insufficient Capacity in System [ ] Treatment Unit Failure

[ ] Sewer System Blockage [ ] Pipe Collapse [ ] Root Intrusion [ ] Grease Blockage

[ ] Other:

7. Corrective Actions Taken

Crews assessed the situation and determined the backup was caused by the rain event. Combined sewer wet weather capacity related issues that result in SSOs are tracked, trended, and regularly prioritized in an asset management system and addressed through the annual capital planning program.

Impact Area Cleaned and/or Disinfected: [ ] Yes [X] No

Corrective Actions Completed: [X] Yes [ ] No

D. Comments/Attachments/Follow-up

I wish to provide (select all that apply):

[ ] Attachment [ ] Additional Comments Below [ ] No Additional Comments or Attachments

Additional Comments and Planned Actions:

Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

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Signature of Authorized Representative

12-8-16

Date Signed

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Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Watershed Permitting Program

FOR DEP USE ONLY

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

Tax Identification Number

A. Reporting Facility

1. Facility Information

Springfield Water and Sewer Commision	0101613 & 0103331
Reporting Sewer Authority	Permit #

2. Autorized Representative Transmitting Form:

Ryan Wingerter	413-787-6256 x128
Name	Telephone #
Deputy Director of Wastewater Operations	ryan.wingerter@waterandsewer.org
Title	Email Address

B. Phone Notifications

MassDEP Staff Contacted: _____ _____

Date/Time Contacted: _____ _____

EPA Staff Contacted: _____ _____

Date/Time Contacted: _____ _____

Board of Health Contacted: _____ _____

Date/Time Contacted: _____ _____

Others Notified:

☐ Harbormaster ☐ Shellfish Warden ☐ Conservation Commision ☐ Division of Marine Fisheries

☐ Downstream Drinking Water Supply ☐ Watershed Association ☐ Beach Resource Manager

☐ Other: _____

C. SSO Information

1. SSO Discovered By: CUSTOMER

Date/Time Discovered: 9/19/2016 2:10 PM

2. SSO Date/Time Stopped: 9/19/2016 3:10 PM

3. SSO Discharge From: ☐ Sanitary Sewer Manhole ☐ Pump Station ☒ Backup Into Property

☐ Other: _____

4. SSO Discharge To: ☐ Ground Surface (no release to surface water)

☐ Direct to Receiving Water _____ (surface water)

☐ Catch Basin to Receiving Water _____ (surface water)

☒ Backup Into Property Basement

Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

FOR DEP USE ONLY

Tax Identification Number

C. SSO Information (cont.)

Location: 1326 Worcester St. (I.O.)
(description of discharge site or closest address)

5. Estimated SSO Volume at Time of This Report: < 10,000 gal

Method of Estimating Volume: Visual inspection of basement after back-up

6.Cause of SSO Event

[X] Rain Event [ ] Pump Station Failure [ ] Insufficient Capacity in System [ ] Treatment Unit Failure

[ ] Sewer System Blockage [ ] Pipe Collapse [ ] Root Intrusion [ ] Grease Blockage

[ ] Other:

7. Corrective Actions Taken

Crews assessed the situation and determined the backup was caused by the rain event. Combined sewer wet weather capacity related issues that result in SSOs are tracked, trended, and regularly prioritized in an asset management system and addressed through the annual capital planning program.

Impact Area Cleaned and/or Disinfected: [ ] Yes [X] No

Corrective Actions Completed: [X] Yes [ ] No

D. Comments/Attachments/Follow-up

I wish to provide (select all that apply):

[ ] Attachment [ ] Additional Comments Below [ ] No Additional Comments or Attachments

Additional Comments and Planned Actions:

Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

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Signature of Authorized Representative

12-8-16

Date Signed

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Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Watershed Permitting Program

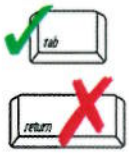
Sanitary Sewer Overflow (SSO)/Bypass Notification Form

FOR DEP USE ONLY

Tax Identification Number

A. General Information

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



1. Facility Information

NPDES Permit No. 0101613 & 0103331
a. Reporting Facility Permit Number

Springfield Water and Sewer Commission
b. Name of Collection System/Treatment Works

2. Authorized Representative filing this notification form:

Ryan (a. First Name) | Wingerter (b. Last Name) | 413-787-6256 (c. Telephone (10))

Collection System Superintendent (d. Title of Authorized Representative) | ryan.wingerter@waterandsewer.org (e. E-mail Address of Authorized Representative)

3. Event Report Information

a. Are you reporting: ☒ 1. Unanticipated SSO or Bypass ☐ 2. Anticipated SSO or Bypass

See DEP Regional Office telephone and fax numbers at the end of this form.

B. Phone Notifications Made, if any:

1. **MassDEP person** contacted: (a. first name) (b. last name)

Date/Time MassDEP contacted by phone: (c. Date (mm/dd/yyyy)) Time: (d. hh:mm) ☐ e. am ☒ f. pm

2. **EPA person** contacted: (a. first name) (b. last name)

Date/Time EPA contacted by phone: (c. Date (mm/dd/yyyy)) Time: (d. hh:mm) ☐ e. am ☐ f. pm

3. Others notified (select all that apply): ☐ a. Conservation Commission ☐ b. Board of Health ☐ c. Harbormaster ☐ d. Downstream WS ☐ e. Watershed Association ☐ f. Shellfish Warden ☐ g. Other: (h. Specify)

C. General Information About SSO/Unanticipated Bypass

1. When did the event occur? 4-17-16 (a. Date (mm/dd/yyyy)) Time: 9:29 (b. hh:mm) ☒ c. am ☐ d. pm

2. Location of event: 2465 Roosevelt Ave (a. Number and Street (or closest address)) (b. latitude) (c. longitude)

3. Estimated volume of overflow discharge at the time of this report (select one):

☐ a. > 1 million gallons (MG)
☐ b. > 100,000 gal. and < 1 MG
☐ c. > 10,000 gal. and < 100,000 gal.
☒ d. < 10,000 gal.

e. Method of estimating volume: Visual

4. Where did the overflow discharge to? (e.g., surface water, ground) Basement

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notification Form

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Tax Identification Number

C. General Information About SSO/Unanticipated Bypass (cont.)

5. Identify causes of/reasons for the event: (select all that apply)

☐ a. rain ☐ b. snowmelt ☐ c. high groundwater

☐ d. insufficient capacity ☒ e. sewer system blockage or collapse

☐ f. pump/lift station failure ☐ g. treatment facility equipment failure

☐ h. Other: _____ i. Specify

6. Have corrective actions been completed? ☒ a. Yes ☐ b. No ☐ c. No Action Required

7. Corrective measures taken (select all that apply, or use Section E to attach additional comments):

☒ a. repaired sewer/cleared blockage ☐ b. repaired pump/lift station ☐ c. repaired service connection

☐ d. drained or pumped sewage out of building ☐ e. disinfection treatment ☐ f. backflow prevention device installed

☐ g. Other: _____ h. Specify

D. General Information About Anticipated Bypass

1. When will the bypass occur? _____ a. Date (mm/dd/yyyy) Time: _____ b. hh:mm ☐ c. am ☐ d. pm

2. Where will the bypass occur? _____ a. Number and Street (or closest address) _____ b. latitude _____ c. longitude

3. Estimated volume of overflow discharge at the time of this report (select one):

☐ a. < 100,000 gallons (MG) ☐ b. > 100,000 gal. and < 1 MG ☐ c. > 1 million gallons (MG)

d. Method of estimating volume: _____

4. Identify causes of/reasons for the event: (select all that apply)

☐ a. rain ☐ b. snowmelt ☐ c. high groundwater

☐ d. insufficient capacity ☐ e. sewer system blockage or collapse

☐ f. pump/lift station failure ☐ g. treatment facility equipment failure

☐ g. Other: _____ i. Specify

5. Will an SSO occur during the bypass? ☐ a. Yes

a.1. Where will SSO discharge to? _____

A 5-day follow-up report is required for the SSO.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Watershed Permitting Program

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D. General Information About Anticipated Bypass (cont.)

5. ☐ b. No

Please be advised that if the anticipated bypass detailed above results in an unanticipated bypass/SSO, MassDEP must be notified within 24 hours and a new form completed.

Please provide comments in Section E detailing the preventive measures to be taken during the event.

E. Comments/Attachments/Follow-up

I wish to provide (select all that apply):

☐ 1. Attachment ☐ 2. Additional comments below: ☐ 3. No additional comments or attachments

2a. Additional comments and planned actions:

F. Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

1. Signature of Authorized Representative

4-20-16
2. Date Signed

Please keep a copy of this report for your records. When submitting additional information, include the MassDEP Incident Number from this report.

MassDEP Regional Office and EPA Telephone and Fax Numbers:

Northeast Region	Phone: 978-694-3215	Fax: 978-694-3499
Southeast Region	Phone: 508-946-2750	Fax: 508-947-6557
Central Region	Phone: 508-792-7650	Fax: 508-792-7621
Western Region	Phone: 413-784-1100	Fax: 413-784-1149
EPA Contact	Phone: 617-918-1766	
DEP 24-hour emergency	Phone: 888-304-1133	

Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Watershed Permitting Program

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Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

Tax Identification Number

A. Reporting Facility

1. Facility Information

Springfield Water and Sewer Commision	0101613 & 0103331
Reporting Sewer Authority	Permit #

2. Autorized Representative Transmitting Form:

Ryan Wingerter	413-787-6256 x128
Name	Telephone #
Collection System Superintendent	ryan.wingerter@waterandsewer.org
Title	Email Address

B. Phone Notifications

MassDEP Staff Contacted: _____ _____

Date/Time Contacted: _____ _____

EPA Staff Contacted: _____ _____

Date/Time Contacted: _____ _____

Board of Health Contacted: _____ _____

Date/Time Contacted: _____ _____

Others Notified:

☐ Harbormaster ☐ Shellfish Warden ☐ Conservation Commision ☐ Division of Marine Fisheries

☐ Downstream Drinking Water Supply ☐ Watershed Association ☐ Beach Resource Manager

☐ Other: _____

C. SSO Information

1. SSO Discovered By: Springfield police

Date/Time Discovered: 8/2/2016 6:25 AM

2. SSO Date/Time Stopped: 8/2/2016 7:15 AM

3. SSO Discharge From: ☒ Sanitary Sewer Manhole ☐ Pump Station ☐ Backup Into Property

☐ Other: _____

4. SSO Discharge To: ☐ Ground Surface (no release to surface water)

☐ Direct to Receiving Water _____ (surface water)

☒ Catch Basin to Receiving Water Connecticut River (surface water)

☐ Backup Into Property Basement

Massachusetts Department of Environmental Protection

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Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

Tax Identification Number

C. SSO Information (cont.)

Location: Mill St to Main ST

(description of discharge site or closest address)

5. Estimated SSO Volume at Time of This Report: < 10,000 gal

Method of Estimating Volume: Visual

6.Cause of SSO Event

[X] Rain Event [ ] Pump Station Failure [ ] Insufficient Capacity in System [ ] Treatment Unit Failure

[ ] Sewer System Blockage [ ] Pipe Collapse [ ] Root Intrusion [ ] Grease Blockage

[ ] Other:

7. Corrective Actions Taken

Secured Manhole Cover

Impact Area Cleaned and/or Disinfected: [ ] Yes [X] No

Corrective Actions Completed: [X] Yes [ ] No

Secured Manhole Cover

D. Comments/Attachments/Follow-up

I wish to provide (select all that apply):

[ ] Attachment [ ] Additional Comments Below [ ] No Additional Comments or Attachments

Additional Comments and Planned Actions:

Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Watershed Permitting Program

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Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

Tax Identification Number

E. Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative

8/3/16

Date Signed

Please keep a copy of this report for your records. When submitting additional information, include the MassDEP Incident Number from this report.

MassDEP Regional Office and EPA Telephone and Fax Numbers:

Northeast Region	Phone: 978-694-3215	Fax: 978-694-3499
Southeast Region	Phone: 508-946-2750	Fax: 508-947-6557
Central Region	Phone: 508-792-7650	Fax: 508-792-7621
Western Region	Phone: 413-784-1100	Fax: 413-784-1149
EPA Contact	Phone: 617-918-1870	Fax: 617-918-0870
DEP 24-Hour Emergency	Phone: 888-304-1133	

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notification Form

FOR DEP USE ONLY

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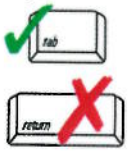
A. Reporting Facility

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



1. Facility Information

Springfield Water and Sewer Commission — Reporting Sewer Authority

0101613 & 0103331 — Permit #

2. Authorized Representative Transmitting Form:

Ryan — First Name

Wingerter — Last Name

413-787-6256 x128 — Telephone No.

Collection System Superintendent — Title

ryan.wingerter@waterandsewer.org — E-mail Address

B. Phone Notifications:

See DEP Regional Office telephone and fax numbers at the end of this form.

1. **MassDEP staff** contacted: _____ first name _____ last name

Date/Time contacted: _____ Date _____ Time ☐ am ☐ pm

2. **EPA staff** contacted: _____ first name _____ last name

Date/Time EPA contacted: _____ Date _____ Time ☐ am ☐ pm

3. Board of Health contacted: _____ First Name _____ Last Name

Date/Time contacted: _____ Date _____ Time ☐ am ☐ pm

4. Others notified (select all that apply); ☐ Conservation Commission

☐ Harbormaster ☐ Shellfish Warden ☐ Division of Marine Fisheries

☐ Downstream Drinking Water Supplier ☐ Watershed Association

☐ Beach Resource Manager ☐ Other: _____ (specify)

C. SSO Information

1. SSO Discovered: 6-9-16 Date 10:16 Time ☒ am ☐ pm

By: SWSC

2. SSO Stopped: 6-9-16 Date 11:30 Time ☒ am ☐ pm

3. SSO Discharge from: ☒ Sanitary Sewer Manhole ☐ Pump Station

☐ Backup into Property ☒ Other: Main (specify)

4. SSO Discharge to: ☐ Ground Surface (no release to surface water)

☒ Direct to Receiving Water — Connecticut River (surface water)

☐ Catch basin to Receiving Water _____ (surface water)

☐ Backup into Property Basement

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Watershed Permitting Program

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Tax Identification Number

C. SSO Information (cont.)

Location: Union St Between East Columbus Ave and Main St
(Description of discharge site or closest address)

5. Estimated SSO Volume at time of this Report: <10000 gallons

   Method of Estimating Volume: Visual

6. Cause of SSO Event:

   ☐ Rain Event ☐ Pump Station Failure ☐ Insufficient Capacity in System

   ☐ Treatment Unit failure

   ☐ Sewer System Blockage: ☐ Pipe Collapse ☐ Root Intrusion ☐ Grease Blockage

   ☐ Other: (Specify)

7. Corrective Actions Taken:

   Blockage cleared and cleaned

   Impact Area cleaned and/or disinfected: ☒ Yes ☐ No

   Corrective Actions Completed: ☒ Yes ☐ No

D. Comments/Attachments/Follow-up

I wish to provide (select all that apply):

☐ Attachment ☐ Additional comments below: ☐ No additional comments or attachments

Additional comments and planned actions:

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notification Form

FOR DEP USE ONLY

Tax Identification Number

E. Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative

6-9-16
Date Signed

Please keep a copy of this report for your records. When submitting additional information, include the MassDEP Incident Number from this report.

MassDEP Regional Office and EPA Telephone and Fax Numbers:

Northeast Region	Phone: 978-694-3215	Fax: 978-694-3499
Southeast Region	Phone: 508-946-2750	Fax: 508-947-6557
Central Region	Phone: 508-792-7650	Fax: 508-792-7621
Western Region	Phone: 413-784-1100	Fax: 413-784-1149
EPA Contact	Phone: 617-918-1870	Fax: 617-918-0870
DEP 24-hour emergency	Phone: 888-304-1133	

Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Watershed Permitting Program

FOR DEP USE ONLY

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

Tax Identification Number

A. Reporting Facility

1. Facility Information

Springfield Water and Sewer Commision	0101613 & 0103331
Reporting Sewer Authority	Permit #

2. Autorized Representative Transmitting Form:

Ryan Wingerter	413-787-6256 x128
Name	Telephone #
Deputy Director of Wastewater Operations	ryan.wingerter@waterandsewer.org
Title	Email Address

B. Phone Notifications

MassDEP Staff Contacted: _____ _____

Date/Time Contacted: _____ _____

EPA Staff Contacted: _____ _____

Date/Time Contacted: _____ _____

Board of Health Contacted: _____ _____

Date/Time Contacted: _____ _____

Others Notified:

☐ Harbormaster ☐ Shellfish Warden ☐ Conservation Commision ☐ Division of Marine Fisheries

☐ Downstream Drinking Water Supply ☐ Watershed Association ☐ Beach Resource Manager

☐ Other: _____

C. SSO Information

1. SSO Discovered By: CUSTOMER

Date/Time Discovered: 8/16/2016 8:00 AM

2. SSO Date/Time Stopped: 8/16/2016 9:00 AM

3. SSO Discharge From: ☐ Sanitary Sewer Manhole ☐ Pump Station ☒ Backup Into Property

☐ Other: _____

4. SSO Discharge To: ☐ Ground Surface (no release to surface water)

☐ Direct to Receiving Water _____ (surface water)

☐ Catch Basin to Receiving Water _____ (surface water)

☒ Backup into Property Basement

Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Watershed Permitting Program

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C. SSO Information (cont.)

Location: 149 Walnut St
(description of discharge site or closest address)

5. Estimated SSO Volume at Time of This Report: < 10,000 gal

Method of Estimating Volume: Visual inspection after back-up

6.Cause of SSO Event

☐ Rain Event ☐ Pump Station Failure ☐ Insufficient Capacity in System ☐ Treatment Unit Failure

☐ Sewer System Blockage ☐ Pipe Collapse ☐ Root Intrusion ☐ Grease Blockage

☐ Other:

7. Corrective Actions Taken

Crews assessed the situation and determined the backup was caused by the rain event. Combined sewer wet weather capacity related issues that result in SSOs are tracked, trended, and regularly prioritized in an asset management system and addressed through the annual capital planning program

Impact Area Cleaned and/or Disinfected: ☐ Yes ☒ No

Corrective Actions Completed: ☒ Yes ☐ No

D. Comments/Attachments/Follow-up

I wish to provide (select all that apply):

☐ Attachment ☐ Additional Comments Below ☐ No Additional Comments or Attachments

Additional Comments and Planned Actions:

Sanitary Sewer Overflow (SSO)/Bypass Notfication Form

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E. Certification Statement

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Signature of Authorized Representative

12-8-16
Date Signed

Please keep a copy of this report for your records. When submitting additional information, include the MassDEP Incident Number from this report.

MassDEP Regional Office and EPA Telephone and Fax Numbers:

Northeast Region	Phone: 978-694-3215	Fax: 978-694-3499
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